


MODERN CUSTOM GUNS

WALNUT, STEEL, AND UNCOMMON ARTISTRY



2ND
EDITION

- Full Color
- Custom Masterpieces
- Unequaled Craftsmanship

TOM TURPIN

MODERN CUSTOM GUNS

WALNUT, STEEL, AND UNCOMMON ARTISTRY



2ND EDITION

TOM TURPIN

Thank you for purchasing this *Gun Digest* eBook.

Sign up for our newsletter and receive special offers, access to free content, and information on the latest new releases and must-have firearms resources! Plus, receive a coupon code to use on your first purchase from GunDigestStore.com for signing up.

Sign Up Here

or visit us online to sign up at
<http://gundigest.com/ebook-promo>

Dedication

To Pauline Turpin, my greatest critic, my biggest fan, and my loving wife.

Introduction

A lot has transpired since I sent the manuscript for *Modern Custom Guns* in to Krause Publications, in 1996. It doesn't seem possible, but that was 17 years ago. Neither the techniques of crafting fine custom guns nor the tools required to do so have changed appreciably during that time, if any. Oh, I suppose that computer-controlled equipment is in a bit more widespread use now than it was in 1996, but I doubt the impact on the custom trade has been all that great. Almost all the artisans I know still do it the old-fashioned way.

The noteworthy change that *has* taken place in the trade has been the disappearance of old familiar faces and the introduction of new ones. Comparing this new *2nd Edition* to the original, these changes will be immediately obvious. In a few cases, the missing artisans have passed on to their rewards. Mostly though, they have simply retired and are enjoying their twilight years. In other cases, they have taken up other professions to earn a better living. Fortunately, new guys come along and take up where the old veterans have left off.

In many cases, the new guys (and a number of older ones, for that matter), often hold down a full-time job to put beans on the table and work their gunmaking as a secondary avocation. Frequently, after a few years as a part-time maker, they will transition into a full-time gunmaking status. Probably equally often, they maintain gunmaking as a part-time function, until they retire from their primary profession.

Whether they be a part-time or full-time gun maker has little or nothing to do with the talent and determination of the artisan; such choices are most often, anyway, a purely economic decision. They feel that they can earn a more comfortable living and better provide for their families, by applying their talents to another more stable and better-paying professional field. That is difficult logic

to another more stable and better paying professional field. That is difficult logic to argue with.

The fact is that gunmaking is a labor of love, any way you look at it. Whether it is a secondary source of income or one's only provider of a living, you have to love it to pursue it for any length of time. I don't know of a single maker who depends upon their income from gunmaking to survive, who couldn't earn substantially more in another field.

It also seems to be true that it is becoming more and more difficult to attract younger guys and gals into custom gunmaking on a full-time basis. Again, this is primarily an economic decision. The younger set, in addition to earning a living, is generally raising a family. That adds to the necessity for a well-paying and steady job. Gunmaking can be, and usually is, a feast or famine proposition; there is either more work than one can possibly complete in a reasonable time, or not nearly enough to sustain the effort.

To add emphasis to this apparent fact, the American Custom Gunmakers Guild (ACGG) hired a consultant awhile back, to help figure out how to improve that organization and its operation. One of the first items of data produced was that the average age of the professional member of the ACGG was at or near retirement age and social security eligibility. I don't recall what the actual age was, but it was in the sixties. That is hardly refreshing news for the longevity of the ACGG, though it should not come as a shock to those who attend the annual Guild exhibition. A good set of eyes toward the exhibitors would lead anyone to the same conclusion. The term "spring chicken" does not come to mind.



Friend Sid Johnson checking out his Al Lind-made custom rifle, before heading out on a Coues deer hunt, in Sonora, Mexico.



Photo courtesy Gary Bolster

Gary Goudy has been making stocks for a very long time. It is safe to say he knows how to make one. This rifle is chambered for the .17 Remington cartridge and features a lovely English walnut stock and Gary's almost signature checkering pattern, a fleur de lis pattern with ribbons.



Photo courtesy Gary Bolster

Gary Goudy stocked this rifle with its medium-heavy bore strictly for open sights. Chambered for the .358 Norma Magnum, it will take care of North America's largest game animals with ease.

Even so, there are some very talented younger individuals who are plying the gunmaking trade. A few of them are so talented that some of the old-timers who have built their reputations on a lifetime of turning out fantastic work had better watch their backsides. Gunmaking seems to be a trade wherein there is no status quo. The maker is either moving forward, or, if not, and whether realized or not, is moving backward. There is no standing still.

In this *2nd Edition*, I have tried to bring the reader up to date within the craft. I have tried to feature the best and the brightest. If, by chance, one of your favorites is not featured, there can be a number of reasons for that omission. First is that perhaps I've not heard of them before and am therefore not familiar with their work. Another is that they may not want to be featured in this book. Another, and probably the most common reason, is that they do not have any

quality photos of their work, are poor photographers themselves, and are unwilling to spend a few bucks to have some professional photos done. Either that, or they are in such a hurry to get the firearm shipped to its new owner (and get paid), that they won't take the time to have photos done.



Four of the author's custom Model 70s. Top to bottom, a .270 Win, a .375 H&H, a .338 Win. Mag., and a .458 Lott.



Photo courtesy Gary Bolster

The late gun maker Maurice Ottmar had a favorite saying. It was, “Life is too short to hunt with an ugly gun.” A hunter armed with the Gary Goudy-stocked rifle below would not need to worry about being accused of hunting with an ugly gun. This one is magnificent.



This is not a man from Mars. It is Curt Crum of the David Miller Co. panographing a fine walnut stock blank to the Miller Classic pattern. The respirator and safety glasses are standard safety equipment in the shop.



One of our very top gun makers, many would say the top maker, is David Miller Co. Composed of Dave Miller and Curt Crum, the rifles leaving their Tucson, Arizona, shop are as good as human hands can make them. Built on highly modified Winchester Model 70 Classic actions (which the company designed for USRAC) and, normally, Krieger cut-rifled barrels, Miller firearms are icons in the trade. These two Classics are good examples.

Although unlikely, it could be that your opinions of quality work and mine, differ. It could also be that the fellow whom you believe to be the salt of the earth, I have reason to believe is a scoundrel of the first order. In those rare cases, my opinion prevails. Not very democratic, I admit, but there the Turpin Golden Rule applies: he who has the gold makes the rules! When discussing the contents of *my* book, I have the gold and I make the rules. Well, the publisher and I make the rules.

An astute reader will also note that there are several artisans who were in the first edition of *Modern Custom Guns* and are also in the second edition, but with new examples of their work. This means, of course, that they are still at the bench, turning out superb examples of the gun makers' and/or engravers' art.

There are also some artisans who were featured in the first edition and missing from the second who are alive and well and still turning out their creations. The most likely reason for them being missing from these pages is that I couldn't get acceptable photographs from them, or I've lost track of them and couldn't get in touch, for whatever reason. If your favorite is missing, I apologize.





Photos courtesy James Anderson

One of the nicest Ruger No. 1 customs I've ever come across. All work, both wood and metal, is by James Anderson. The only thing he didn't do was the engraving, which was masterfully executed by Roger Kehr. The combination of these two talents would be very difficult, if not impossible, to equal, much less better.

Contents

Special Offers

Dedication

Introduction

Chapter 1

Planting the Seed

Chapter 2

A Custom Gun — Why and Why Not

Chapter 3

The Custom Stock

Chapter 4

Custom Metalsmithing

Chapter 5

Actions

Chapter 6

Barrels

Chapter 7

Bells and Whistles

Chapter 8

Sights and Sight Mounts

Chapter 9

Engraving, Carving, and Inlays

Chapter 10

Custom Engravers

John Barraclough

Paula Biesen-Malicki

Jim Blair

C.J. Cai

Hanns Doesel

Mike Dubber

Bob Evans

Peter Ewald

Lee Griffiths

Barry Lee Hands

Roger Henrichs

Brian Hochstrat

Jerry Huddleston

Weldon Lister

Marty Rabeno

Denis Reece

Joe Rundell

Diane Scalese

Ron Smith

Robert “Bob” Strosin

Lisa Tomlin

Sam Welch

Terry Wilcox

Chapter 11

The Specialists

Chapter 12

The Custom Makers

Reeve Abraben
James Anderson
Steve Bertram
Roger Biesen
Steve Billeb
Jim Bisio
John Bolliger
Kent Bowerly
Reto Buehler
James Corpe
Paul and Sharon Dressel
D'Arcy Echols
Glenn Fewless
Jerry Fisher
Gary Goudy
Steve Heilmann
Lee Helgeland
Keith Heppler
Pat Holehan
Steven Dodd Hughes
Jim Kobe
Craig Libhart
Al Lind
Al Lofgren
Ralf Martini
John Maxson
John Mercer
David Miller Co.
Glen Morovits
Steve Nelson
Dave Norin
Joe Smithson
Jeff Tapp
Hugh Toenjes
James Tucker
Michael D. Ullman
David Westbrook
Duane Wiebe
Kevin Wigton

Chapter 13

The Custom Guilds

Chapter 14

Factory Custom Shop Guns

Chapter 15

In Between — Semi-Custom Guns

Chapter 16

The State of the Art Today

Postscript

Custom Gun Makers, Engravers, and Specialists Resource Listing

About the Author

Acknowledgments

Copyright

1

Planting the Seed

It was during my early years that I was instilled with a lifelong interest in custom guns. From my earliest memory, I knew about and appreciated custom gun work. A childhood pal of mine was mostly the cause. His grandfather, whom I never knew, I having been born after his death, had been a custom 'smith. The late Jimmy King was his grandson, and Jimmy and I were like two peas in a pod. We spent all our waking hours together. Jimmy lived across the street from my grandmother, where I spent most of my time before school and during summer vacation.

Jimmy's father had stockpiled the old 'smith's tools in his garage, where Jimmy and I often played. In addition, he stored several thoroughly seasoned blanks of American black walnut left from the old man's stash under the house. As memory now serves me, none of the blanks were fancy, but they were as dry and seasoned as black walnut ever gets. Jimmy decided to restock his BB gun one day, and the two of us reduced the supply of blanks down to shavings in short order. The 'smith's old drawknife — still sharp as a razor, despite years of idleness — was one of the leftover tools used in that early endeavor, one I count as my introduction to custom gun making.

In my early teens, a hunting pal of mine owned a custom rifle that had been locally produced. Starting with a souvenir from WWII, a Model 98 Mauser military rifle, Mr. McDowell, a local craftsman, rebarreled the rifle and chambered it for .30-06. He also whittled out a very nice stock from a piece of locally grown American black walnut. He drilled and tapped the action for scope mounts and fitted a Balvar 8 scope from Bausch & Lomb to the rifle. A rather

odd scope by today's standards, it lacked internal adjustments; all the sighting adjustments had to be made in the scope mounts. It was a very good scope, but has long since gone the way of the dodo bird. No doubt the lack of internal adjustments hastened its demise. (In retrospect, the engineers from Bausch & Lomb had come up with a pretty shrewd design. Scopes of that era were much more fragile than those today. They were also far less waterproof. By placing the adjustments in the mounts instead of the scope tube, the B&L engineers devised both a much stronger and much more waterproof/fog-proof optic than any of the others on the market at the time.) That rifle and its quirky scope provided my first experience with a real custom rifle.



This photo is a scan of a color transparency that was taken some 54 years ago, give or take. My lifelong pal Earl Robbins, a local fellow named Claude Miller, and I were off shooting groundhogs. The rifle I'm holding was the first custom rifle I'd ever seen, let alone shot. It must have started something!



Photo courtesy Gary Bolster

This .375 H&H from the Gary Goudy shop is about as classic in design as one is apt to find. The stock isn't flashy, but has perfect grain flow. It is clean and uncluttered. No one feature about this rifle jumps out at you, but the rifle as a whole certainly does.

A few years later, during my college days, a chum of mine and I decided to try our hand at stockmaking. We were both avid hunters and shooters, and both were members of the college rifle team, competing in interscholastic matches. We each purchased a 1903A3 Springfield rifle from the Department of Civilian Marksmanship, an arrangement through the National Rifle Association, as I recall. In those days, prior to the Gun Control Act of 1964, it was a simple matter to order a firearm through the mail. When we received the rifles, the brand new guns were still packed in Cosmoline! I think we paid something like \$25 each for them.

Guns in hand, the two of us next ordered a pair of black walnut stock blanks from Bishop that were already roughly machine-inletted and shaped for the Springfield. We removed the military stocks and hardware from our rifles and carefully fitted the Bishop blanks to the metal. We further inletted and shaped our stocks using tools from the Industrial Arts Department of the college, where we both were earning our bachelor's degrees. Once we sanded the stocks smooth, we finished them with several coats of boiled linseed oil. Actually, they didn't turn out too badly, and we used our rifles proudly for such hunting as we

man I can cut too easily, and he used our time properly for gun-making as we were able to do at the time. Charlie Byrd, my gun making pal, was considerably more skilled at woodworking than I was. Consequently, his rifle was noticeably more professional looking than mine. It didn't shoot any better, though.

One of our ROTC instructors, Sgt. Fowler (to us, his first name was Sergeant!), served in Germany, during and after WWII. He showed me a rifle that a German gunsmith had built for him. It was, to my unrefined eyes, beautiful. Built on a military 98 Mauser action, it was still chambered for its original 8×57 Mauser military cartridge. The maker had fashioned a new stock and fitted the rifle with a 4x European scope that wore a “picket fence” reticle and was mounted in German claw mounts. He'd finished the rifle by doing a wonderful woodcarving job on the stock. It was quite an impressive job, though these days, I'm not a big fan of stock carving. As Jack O'Connor once wrote, “It reminds me too much of a cuckoo clock.” Back in those unsophisticated days, however, I was enthralled. Sergeant Fowler even let me shoot the rifle a few times, and it shot very well.



The David Miller Co. makes three different custom rifle models. They are the top-of-the-line Classic Model; the Marksmen, shown here; and the newest model, the GraGun. It features a synthetic stock. This Marksmen model is about as flashy as any rifle you'll ever see coming from the Miller shop, the client having chosen a rather colorful laminate stock blank.

My first professionally built custom rifle was also made in Germany. I had somehow, I've long since forgotten how, obtained another 03A3 Springfield. I was serving a tour of duty with the U.S. Army, in Germany, and was stationed at Panzer Kaserne, just outside the little town of Böblingen. There was a gun shop with a resident gunsmith in the little town, and I dropped off my Springfield with him, along with a Weaver K4 scope, a set of Redfield scope mounts, and a semi-inlet and shaped blank of black walnut.

By this time, I was an avid Jack O'Connor reader and, largely thanks to him, I had developed some pretty firm ideas about custom rifle styling. The gunsmith converted the parts into a nice sporting rifle in just a few short weeks. As I now recall, it cost me less than a hundred bucks for the job, not counting the cost of the components. The completed rifle was classically styled from end to end, but

the components. The completed rifle was classically styled from end to end, but still exhibited a few Germanic touches. He'd slimmed down the fore-end a bit more than I'd wanted and finished it off with a slight schnabel. I don't know what it is about Germans and their schnabels, but it was a pretty nice rifle, and I was mostly pleased with it.

Since that first rifle, I don't know how many custom guns have passed through my hands, but the number is substantial. Some were crafted in the shops of little known, but highly talented, artisans. Others, built by well-known makers often featured in the pages of the outdoor press, came my way. Many were built specifically for me, while others were made for someone else, and I picked them up second-or third- (or more) hand. Most of the work was superb.

I have often heard it said that craftsmanship is a dying art. The theory seems to be that, as the older legends in the business pass on, the younger generation isn't capable of doing the same quality work as had their predecessors. That is pure, unadulterated bunk! Some of the work turned out by mere youngsters today is so good it is mind-boggling. In fact, much of the work done by custom makers of the past wasn't truly all that great, when compared to that coming from the shops of today's artisans.

The best custom gun work ever done in this country, or any other, for that matter, is being accomplished today. I travel each year to a few national exhibitions, primarily Safari Club International's annual bash and the American Custom Gunmakers Guild and Firearms Engravers Guild of America exhibitions. Each time I return home thinking that I have seen it all, that no work is better, that perfection has been achieved. And I am wrong. At the next exhibition, something is on display that is better! So it goes, year after year.

Perhaps, at some point, a level of artistry in wood and metal will be reached that cannot be bettered. After all, perfection is perfection. Theoretically, one cannot improve upon that which is already perfect. Practically speaking, though, there is too much subjectivity involved ever to reach perfection. I doubt seriously if we could even satisfactorily define it, let alone achieve it. Perfection to one aficionado can be and often is barely satisfactory to another. As one wise

to one aficionado can be and often is barely satisfactory to another. As one wise sage once put it, “different strokes for different folks.”

In this tome, the reader will be exposed to my idea of perfection in custom guns. It is opinionated throughout and full of thoughts on what I think a custom gun should be and, by inference, should not be. I chose most of the photographs specifically to illustrate my ideas of superiority. Though there are a few examples illustrated that are not precisely my cup of tea, my objections to them deal largely with styling and aesthetics, not the quality of craftsmanship.

A pal of mine recently took delivery of his newest custom rifle. He called me shortly after UPS delivered it and insisted I come immediately to his place to have a look. I did, but solely out of friendship, not an agonizing desire to see his latest rifle; I’d been through the experience with him many times before. His taste in rifles and mine are at opposite ends of the spectrum. He absolutely loves glitter and flash in his rifles. Exotic wood inlays, glossy finishes, rollover combs, fish scale checkering patterns, and gold inlaid maidens engraved with silver bath towels cause my buddy to swoon with delight. The same stuff gives me heartburn and apoplexy.

Looking at my rifles puts this same *amigo* to sleep. Mine all have classically styled stocks fashioned from good sticks of walnut. All feature satin oil finishes, are precisely checkered in either point or *fleur de lis* patterns, with all the metal surfaces cold rust matte blued. Every time he has a bout with insomnia, a quick peek at a few of my rifles cures his problem. If, on the other hand, I’m up against a hard deadline and need to stay awake for a few days, a glance at his rifles will accomplish that for me. Even so, he loves his rifles as much as I love mine.

That is one of the real advantages of the custom gun. All customers can get what they want in a firearm. My taste is conservative and muted. I want no glitter, no glitz, and no overt fanciness. There are a few hundred makers out there who are only too happy to take my order and deposit. My *compadre*, on the other hand, might have a bit more difficulty in finding a maker willing to satisfy

his druthers, yet still he's found them, many times. We can and do both get what we want.

Three men have, most likely, had more to do with the development and success of the custom gun trade than all others combined, and none of them were professional makers. All were members of the outdoor press who, in addition to their writing skills, were also custom gun fans and users. One of the three did do a fair amount of custom gun work and could probably be accurately categorized as a semi-professional. The other two did no custom gun work that I'm aware of; one would have been unsafe with any kind of a tool in his hands. Two of the three have passed on, while the third is still going strong. I am referring to Jack O'Connor, John T. Amber, and Jim Carmichel. All three had an influence upon the trade like no others before or since. O'Connor and Amber were contemporaries, and Carmichel succeeded O'Connor as shooting editor of *Outdoor Life* magazine.

For those readers who have spent the last few years under a rock, Jack O'Connor was the shooting editor for *Outdoor Life* for more than 30 years. In addition to being an avid hunter and aficionado of custom guns, O'Connor was a polished journalist. He was also, among other positions, the first professor of journalism at the University of Arizona, in Tucson. He wrote numerous books on shooting, hunting, and firearms, as well as two critically acclaimed novels and his autobiography, *Horse and Buggy West*. I have no idea and there is no telling how many magazine articles he wrote in his long career. He was, in my opinion, the best of the lot, before or since. Born in 1902, in Nogales, Arizona Territory, O'Connor came along at a time when game was more plentiful, and game laws far more indulgent. After he tied his fortunes to *Outdoor Life*, he had the ability to hunt pretty much where and when he wanted.

Were it not for O'Connor, the .270 Winchester may well have fallen by the wayside. Thanks to his publicizing his experiences with the cartridge and added to its performance in the hands of others, it is still, even in today's magnum-mania atmosphere, one of the most popular cartridges of all time. The .270

Winchester and the name O'Connor will be inexorably and forever linked together.

To those who have read any of my prose, it is no secret that the .270 is also my favorite cartridge. My experience with it, although pale in comparison to O'Connor's, is directly comparable with the written assessments of his that I've read. He found the cartridge to be a very efficient killer, and so have I. He noted that the 130-grain .277-inch bullet bounced off neither hair nor hide, a point I concur with. He found that a .270 bullet in the right place killed as well as, and often better than, larger and more powerful cartridges. So have I.

O'Connor was a lover of fine wood and precise checkering. Almost all of his personal battery were, at a minimum, custom stocked. One maker, Al Biesen, at least from the mid-'50s or so until his death, did most of Jack's stock jobs. Over the years, he had several rifles built by other makers, but Biesen did most of them. Biesen stocked his first rifle for O'Connor in 1947, but his final gun for Jack was not completed until after the writer's death, in 1978. As a matter of interest to O'Connor fans, that final rifle was a Ruger Model 77 chambered for the .280 Remington, of all things.

Through his stories of hunting trips in which he'd used rifles built by Biesen, Len Brownell, Earl Milliron, Al Linden, and many others, O'Connor directed the attention of his thousands of fans to the custom gun. Many makers in the business today owe their livings to Jack. But one writer and editor whose influence on the custom gun trade was perhaps even greater than O'Connor's was his contemporary, John T. Amber. Amber was the editor of *Gun Digest* for more than 30 years. He built that publication from little more than a pamphlet to the tome it is today. I knew Amber well, because he was my mentor in the writing business. He was rash, irascible, ornery, and downright cantankerous. He was also suave, debonair, charming, and a gentleman's gentleman. He knew guns like few of his peers. His two great loves in life were single-shot rifles and custom guns.

Amber bought and published the second story I ever wrote for publication.

(My first had been published in *Guns & Ammo*, a bit earlier.) Amber saw something in me he liked — don't ask me what it was, as to this day I have no idea what motivated him. Whether he felt I had talent and would someday write well and knowledgeably, or whether he simply looked kindly upon me, I can't say. What I do know is that he took me under his wing and nurtured me along. He knew when to pat me on the back and give freely of his praise. He knew equally well when a size 10 boot, appropriately placed on my backside, was necessary. He was not reluctant to administer whichever motivational aid he felt was necessary.

The old man was a walking encyclopedia of firearms knowledge. Particularly fond of period single-shot rifles, he amassed a wonderful collection of outstanding and rare specimens. He was so enamored with this type of rifle that he named his home base in Marengo, Illinois, Creedmore Farms.

Each issue of *Gun Digest* contained a lengthy pictorial section that showcased custom guns and custom engravings. In addition, it was a rare issue that didn't contain a feature article or two on the subject. Amber personally penned many of the articles, but he also avidly sought out other writers with expertise on the subject. He attended and reported on most of the major European firearms exhibitions held each year, the lone member of the American gun press to do so, and he reported on this scene in *Gun Digest*, the only real source of this data in the American outdoor press. Amber was a trend-setter in many ways. He was also a wonderful man and a great friend.

Amber was instrumental in getting the American Custom Gunmakers Guild (ACGG) off the ground. He had a keen interest in the Guild and, more importantly, in the goals and intentions of its founders. He nurtured and cajoled a small group of artisans into forming the Guild, supporting it even after he'd drawn his last breath; in his will, he bequeathed a substantial endowment to the Guild, to support its aims and aspirations for many years to come.

While both O'Connor and Amber kept custom guns constantly in the eyes of their shooting fans, they did so from two different perspectives. That both men

loved fine custom guns is a given. I believe, however, that O'Connor loved them more so for their hunting use. He used his custom guns in the hunting fields all over the world, and he wrote about them from the perspective of a hunter. Amber, on the other hand, wrote about custom guns from the perspective of the gun itself. Amber was a hunter, to be sure, but with nothing like the same level of passion exhibited by O'Connor. Simply stated, O'Connor used the custom gun to hunt. Amber hunted to use the custom gun.

O'Connor finally retired from *Outdoor Life*, when he learned that, if he continued on the staff after a certain age, he would lose a substantial amount from his pension. So he made a deal with the editor. He would retire, but continue to write for the magazine, on a regular basis, as a contributor. He would not be on salary, but rather on a fee-per-article basis. Apparently, the pact with the editor was a gentleman's agreement, sealed with a handshake, and it worked nicely until the editor reached the mandatory retirement age as well, little more than a year later. A new editor was named, and trouble started shortly thereafter. Finally, O'Connor could stand it no more and quit, soon transitioning to work for *Petersen's Hunting Magazine*. He was still writing for that publication, when he passed away.

O'Connor's replacement at *Outdoor Life* was a young Tennessean. In addition to his talent as a writer, Jim Carmichel knows his way around a gun shop vise and is no stranger to competitive target shooting. O'Connor, it should be said, had neither talent. He had participated in few if any organized competitive matches; if he did, he never wrote about doing so that I've read. In matters technical, he was also a real klutz. O'Connor often bragged that he didn't learn how to tie his shoes until half grown. Carmichel, on the other hand, is an accomplished competitive shooter (he very recently set a new world record in benchrest competition) and a talented amateur gunsmith. He wrote about earning his way through college doing gunsmithing work. He is also an avid hunter. He stepped in to fill a very large pair of shoes, when he took over

O'Connor's position at *Outdoor Life*, and did so admirably until his retirement just a few short years ago.



Photo courtesy Gary Bolster

This Winchester Model 70 Featherweight .30-06 has received the Gary Goudy/Bob Evans treatment. Gary stocked the rifle in a nice stick of English walnut, and Bob engraved the metalwork. Clean lines and beautiful work aptly describe this rifle.

Carmichel is also a lover of fine custom guns. In addition to his many magazine articles in *Outdoor Life*, he has authored several books. *Jim Carmichel's Book of the Rifle* is a standard reference on the subject, and a sizable portion of that work is devoted to custom rifles and builders. As it was with O'Connor and Amber before him, Carmichel has helped along the careers of several custom makers. I first heard of guys like David Miller, Gary Goudy, and Duane Wiebe, while reading his prose.

A few other writers have boosted the lot of the custom gun craft. Colonel Townsend Whelen, Elmer Keith, Pete Brown, and Warren Page from the past, and Terry Wieland, Craig Boddington, Ross Seyfried, Holt Bodinson, and

perhaps another or two from the present. None have had the impact of O'Connor, Amber, and Carmichel though.

The title of this book refers to custom guns, but the reader will find that most of the material deals with custom rifles. I have made a valiant effort to cover both custom handguns and shotguns in the book, but it's a fact that most of the custom guns turned out today are rifles. Early in the development process, I gave considerable thought to restricting the book content exclusively to custom rifles, but decided against that, primarily because there are both custom shotguns and handguns that do merit coverage. To leave them out would be unfair to their creators.

With this short synopsis of what is before you, sit back, relax, and enjoy. Stoke a favored pipe with your preferred tobacco blend and pour a healthy portion of Scotland's finest dew before beginning. If you enjoy reading the prose only half as much as I enjoyed writing it, then we are both eminently successful.

2

A Custom Gun — Why and Why Not

Over the years, we have all read “expert” definitions of what a custom gun is and, by inference, what it is not. Most of these definitions start by quoting from *Webster’s*. My copy of *Webster’s New Collegiate Dictionary* defines custom as “made or performed according to personal order.” It further defines custom built as “built to individual specifications.” Neither definition is complicated or difficult to understand. Unfortunately, arguments often ensue, because of this simplicity. The term is far more subjective than objective, and personal opinion weighs heavily in any discussion of the topic. Some wise sage once said that opinions are like behinds, everyone has one. (No, the sage didn’t exactly use the word “behind,” he was a bit more blunt, but the point’s the same.)

Some argue that, unless the gun was built specifically for its owner, it is not a custom gun. If I accepted that definition, my pet custom rifle would not meet the criteria. The David Miller Co. custom built my rifle several years before I acquired it for someone else. The client who’d had it built had grown tired of rifles and taken up competitive shotgun shooting, swapping the rifle for a high-grade shotgun in pursuit of his new hobby. Miller learned of the trade and bought the rifle from the dealer who’d made the swap. He gave it a thorough cleaning and general spiffing, then offered it to me at an attractive price.

Though, at the time I obtained it, the rifle was nothing like Miller’s production now, it likewise had a sale’s tag nowhere near his prices now. It was still well above my budget — most anything would have been — but it was likely my only chance to own a David Miller rifle in my lifetime. I snapped it up.

Since then, the rifle has been around the world with me. It has frozen in Alaska, and baked in Africa. It has been transported via Super Cubs, pack mules, gun bearers, and jumbo jets. Still, even after a jarring cross-country ride in a Land Cruiser, it will put three shots under a ½-inch.

Even though this rifle was not crafted specifically for me, it is still a custom rifle. There is but one like it, and it is simply now mine. It would take a lot of bucks to get it away from me and, even then, I would have to be pretty hungry to part with it. It has served me so well that it is now in semi-retirement. I still drag it out once in awhile for a range visit or a short hunt. Usually, though, it occupies a place of honor in my gun safe.

There are many reasons to have a custom rifle, shotgun, or, handgun built. Most are very valid. A few are not. My purpose in writing this chapter is to attempt to emphasize some of the many compelling justifications, as well as call into question some that just might not be genuinely appropriate.

Most folks are content to live in a tract home in a subdivision full of almost identical houses. Many of these houses are so alike that the occupant, particularly after an evening of swapping tall hunting tales and a “sundowner” or three, must be very careful not to wander into the wrong house! Others are not happy with anything less than an English manor house on a 50-acre estate. Regardless the preference, functionally, both houses provide the same things: shelter, warmth and, in one manner or another, comfort and security.



Photo by Gary Bolster

Bob Evans embellished this Harre action .375 H&H rifle that Gary Goudy put together. The client has a super-functional hunting rifle that looks as good as it works.

In the same vein, a Volkswagen Beetle and a Rolls Royce Silver Shadow II each provide adequate transportation. Both cars, assuming normal maintenance and care, will reliably take the driver from point A to point B. The decision of which model to buy, however, has little to do with transportation. That choice is based more on taste, ego, and the size of one's bank account.

This type of comparison is useful in discussing a custom rifle versus the factory product. Both will satisfactorily do the job for which they were designed. Factory rifles vary in sophistication from the mass-produced Remington 700 and its competitors to the more refined Dakota 76 and similar rifles. They are usually excellent rifles. Each can be relied upon to deliver a bullet on the target, with groups measuring two minutes of angle (MOA) and often substantially less than that measure.

For the hunter who uses his rifle merely as a tool, an assembly line model, identical to thousands of others, is usually plenty good enough. On the other hand, for those who want only the best or who appreciate beauty and admire technical virtuosity above all else, a full custom job is the only way to go. Not only can such aficionados have their rifles built to fit them exactly, they also may specify wood, finish, checkering pattern, accessories and, if wanted, engraving. They can, if they are of a mind, develop a unique cartridge and have a rifle wrapped around it. They can have precisely what they want and can rest assured the finished rifle will be the best in the world. There is no question in my mind that our custom artisans here in the United States craft the finest rifles on the globe to meet such demands. Few others even come close.

There is one aspect of rifles, whether factory or custom, that needs an honest discussion: the frequently maniacal concern for accuracy. Judging from my more than 50 years of personal experience and from what I have read during the same

period, there is apparently a dichotomy between what is written about accuracy and what I have experienced, firsthand, at the range. Either most writers on the subject are much better shooters than I am, or they have been far luckier in obtaining super-accurate rifles, maybe both. I won't say that perhaps several did their shooting at the keyboard, but I will say this.



Photo courtesy Buck Buckner, Brad O'Connor, and the Jack O'Connor Hunting heritage and Education Center

Here is a historical photo of the man himself, Jack O'Connor, in the Arizona desert, shooting the same rifle I used, in Texas, on a blackbuck on the Priour ranch. This photo is from the 1940s, I suspect.

Many years ago, a dear friend and colleague of mine at *GUNS Magazine*, Jim Woods, lived nearby. He lived on a small ranch, 20 miles or so from where I lived in town. Although there was no “proper” range in his neighborhood, his ranch backed up to a few hundred-thousand acres of forest service-managed public lands. We had a portable bench and an assortment of sandbags, along with everything else we needed to do our range work.

Jim and I always went about our shooting together. We figured that the chances of both of us having an off day at the bench were pretty slim. We both shot our rifles, whether it was for a test he was doing or one of mine. After all, we were testing the rifles, not the shooters. It worked pretty well for us, until he moved to Tucson, gave up the outdoor press, and started writing novels. These days, I use my son as backup for my range assignments. Either way, Jim and I have gone about our jobs the way we know how, from the bench.

In my rack I have several superbly accurate rifles. Most are custom jobs, or at least have been customized in one fashion or another. Yet that fact doesn't mean they are superbly accurate *because* they are custom jobs. It just so happens that *all* my personal rifles have at least some custom features. Had I used only factory rifles during the same period, I'm sure that I would have approximately the same number of tack-drivers.

Long ago, I lost count of just how many rifles I have owned over the years. I would guess at least a couple hundred have gone through my hands, perhaps more. Most all of them were, at a minimum, taken to the range for a trial. If a rifle would group MOA or better, it went automatically into my keeper rack. If truly accurate rifles were as common as one would believe after reading all the published hype, my tack-driver rack should be *overflowing*. It really isn't. From my experience, I believe that consistently MOA-capable rifles are far less commonly encountered than popular opinion or media press releases seem to suggest.

I will also say this: MOA-capable rifles are far *more* common today than they were just a few short years ago, when Jim and I were doing our gigs. In those days, a rifle that truly and consistently delivered MOA or better groups was one to guard at all costs and never let out of one's sight. Many were discussed in the press, but damn few showed up on the range, at least the ranges where I was. These days, with tremendous improvements in rifle and ammunition technology, MOA-capable rifles are far more common. I'd even

hazard a guess there are more MOA-capable rifles than there are MOA-capable shooters. Perhaps it was always that way.

Frankly, I think there is far too much importance attached to accuracy anyway. Unless the shooter is into the benchrest game or is an avid varmint shooter, MOA or better accuracy is not obligatory for a perfectly satisfactory hunting rifle. Lest there be a misunderstanding, let me make it clear that I advocate trying to get every bit of accuracy that is humanly possible to obtain from a rifle. Many can be improved, often profoundly, by tinkering with the bedding, playing with the screw torque, and/or carefully developing a load that works best in a given rifle. When all that has been done, though, and the best groups that can be obtained are 1½ to two MOA, it's not a big deal. Such accuracy is perfectly satisfactory for a hunting rifle, despite the malarkey to the contrary. The biggest variable in the accuracy game has little to do with the rifle anyway. The most significant inconsistency is the shooter.



Photo courtesy Jim Blair

This Winchester semi-auto .22 RF has had considerable effort devoted to it. The metal has been cleaned up, it has been custom stocked, and Jim Blair has spent a lot of highly talented time dolling it up. What's not to like?

We all know people who, even when shooting a rifle that delivers ½-MOA groups, still can't hit Elmer Keith's hat at 100 yards. Yet others, using rifles that aren't otherwise particularly accurate in the hands of most shooters, can blast the wings off a gnat! No rifle builder, no matter how talented the individual maker might be, can alter this fact. This is a reality that simply must be accepted. Naturally, this truth can cause problems between the maker of a rifle and the shooter. It's pretty tough to tell someone that the problem isn't the rifle, but rather that someone's ineptitude at the range. Most shooters cannot accept the fact that the sling shot-sized groups they've been getting are caused by flinching, jerking, poor vision, or that, for whatever reason, they just can't shoot accurately anymore, if they ever had that ability to begin with.

I am a firsthand example of one who's been a pretty fair shot for most of his life, both in the field and on the range. In my youth, I was co-captain of my University rifle team, and I shot competitively on several different U.S. Army rifle teams for a number of years, both active duty and reserve. However, the older I got, the more I noticed that shooting teeny-tiny groups had become more and more difficult. In my sixties, I came to the conclusion that, although I could occasionally still turn in a ½-MOA group or under, I did so less and less frequently. When that fact became glaringly apparent, I began taking my son along with me on all range trips of importance, to shoot with me. Now in my seventies, I still do. Invariably, his groups are smaller than mine, sometimes significantly so.

I've known guys who ordered custom rifles singularly, because they couldn't shoot better than dinner plate-sized groups with factory models. Apparently, their thinking is that a custom rifle cures their shooting woes. I recognize that the average custom rifle is generally more accurate than the average factory product. Most quality makers go to extraordinary lengths to true all the surfaces of the

action, ensure that the bolt is concentric with the bore, and hone the trigger to permit a safe, but crisp and effortless release. They will scrape for hours and remove almost microscopic wood shavings from the stock inletting, to obtain a near perfect mating of wood and metal. All this precise and tedious work contributes greatly to the accuracy potential of a rifle.

Still, one of the most consistently accurate rifles I have ever owned is a factory model. Well, that's not totally factual. More correctly stated, it is *mostly* a factory job. The rifle is a Remington Model 700 Light Mountain Rifle in .270 Winchester. I borrowed the rifle from Remington for a story I was doing on the .270. When I received it from the factory, the stock had a hairline crack above the grip, probably because the parcel service delivering it had parked a semi on top of the package. Fortunately, the crack was relatively minor and did not appreciably weaken the stock. I mounted a scope on the rifle and took it to the range. It was superbly accurate, in spite of the cracked stock. In fact, it was so accurate and lightweight, I decided to make a deal with Remington to keep it.

When I had finished the .270 story, I removed the defective stock and sent the barreled action to Mark Phipps, President of Garrett Accur-Light, Inc., in Fort Collins, Colorado. Phipps custom bedded the factory metal into one of his Ultra-Light synthetic stocks. The finished rifle, complete with a Leupold variable 2-7×33mm scope mounted in Talley lightweight mounts, weighs but 7¼ pounds. Even so, it will shoot ½-MOA groups any day of the week. The metal is untouched and remains just as it came from Remington.

Precisely why one rifle is superbly accurate and another, an apparent identical match, scatters its shots with all the precision of a \$10 BB gun, is not known with certainty. I suspect we know far more about the reasons for *inaccuracy*.

This notion makes sense to me. If we really knew all the answers, all rifles would be splendidly accurate. We have come a long way in solving the dilemma, though, and have done it in a reasonably short time span. Fifty years ago, a rifle capable of MOA or less accuracy was a thing to behold. These days, such

accuracy isn't really all that uncommon.



A few years back, I had the honor of participating in a Jack O'Connor tribute hunt at the Dale Priour ranch, in the Texas Hill Country. Jack and Eleanor had previously hunted this ranch. Three of the hunters had the privilege of using rifles that had formerly belonged to the O'Connors. All three were custom jobs. My rifle was a .22R2 Lovell built on a Sharps-Borchardt action. Another hunter used Jack's Biesen pre-'64 Winchester in 7×57, and the other hunter used Eleanor's .30-06, which had been built for her by Lenard Brownell specifically for a tiger hunt, in India. It was also built on a pre-'64 Model 70.

There is no doubt that a major contributor to accuracy is the barrel. No matter how precisely a rifle is put together, if the barrel has flaws, it simply won't shoot. Of course, a really good barrel can be made to shoot poorly by slipshod work. I do not believe, though, that a problem barrel can be made to shoot accurately, no matter what.

Unfortunately, there is only one way to figure out whether a given barrel will shoot precisely: It has to be threaded and chambered, fitted to an action, bedded

into a stock, and taken to the range and shot. It would be wonderful if we had something similar to an electrical voltmeter that could be connected to a barrel for an accuracy reading. Alas, technology has not yet come up with such an indicator. Until some genius invents such a device, shooting is the only way to decide the accuracy potential of a barrel.

Another reason often provided for ordering a custom rifle is to obtain better functionality. Here again, I submit that the average custom rifle will function better and certainly smoother than its factory counterpart, but I don't think the difference is substantial enough to justify ordering a custom job for this reason alone. Most custom 'smiths spend many hours honing the action for their creations, until they eliminate all roughness. Many will even machine a cartridge-specific follower for their rifle. They will grind and polish the feed rails as necessary. When they are finished, the rifle will function flawlessly.

In all fairness, I must say that most of the factory products function well. They might not, and usually don't, have the ball-bearing smoothness of a custom job, nor should that be expected. To attain the Teflon smoothness of most custom rifles requires many hours of skilled handwork, and that translates into money. For the price of a new factory product these days, usually under a thousand bucks and often substantially less than that, you simply aren't going to get it. Error-free function you'll get, yes, but the hot-knife-through-butter smoothness just isn't in the cards. As another wise sage once said, "You can't make a silk purse out of a sow's ear!"



My son, Jeff, has a number of suitable factory rifles of his own, but, when it came time to go after his first pronghorn, he chose my custom Gary Goudy .280 to use. It worked very nicely.

Factory rifles, at least the vast majority of them, can be compared to the aforementioned VW Beetle or the tract home. Economical and dependable, they will do the jobs for which they were designed and will do them well. Don't expect bells and whistles, though. For the price of a Beetle or a subdivision model, expect only the necessities. If bare necessities are not enough, then it is time to start looking toward the Rolls or the palatial estate, or somewhere between the extremes.

I believe that custom rifle accuracy and function are insufficiently superior to a factory model to justify investing in one, for either reason. Having said that, if an individual wants a custom rifle for whatever reason, they should arrange with a maker to have one built. The only necessary reason is that they *want* one. That

is justification enough. All I am saying, as a bit of caution, is that, if the customer demands that a custom rifle shoot better than any factory rifle, he or she may be sorely disappointed. That can lead to unfair and unnecessary conflict between the builder and the client.

A very precise and fastidious custom shop is the David Miller Co., in Tucson, Arizona. David Miller and his associate, Curt Crum, build resplendent rifles. I have watched them work for hours on end and can confirm that none are more conscientious, meticulous, or painstaking in their craft. They will spend hours on a detail that most connoisseurs would consider minor. Even so, the David Miller Co. *only* guarantees its rifle to group 1½ MOA or better. Admittedly, most all *will* shoot better than that, usually considerably better. Still, there is no *assurance* of better than 1½ MOA accuracy. I know of few makers who will certify their rifles to shoot tighter than that.



My pal Sid Johnson had an original Farquharson completely restored to new condition, with Roger Ferrell doing all the metalwork and Al Lind crafting the stock. Chambered for the .450-400 NE cartridge, Sid took it to Africa and shot this buffalo with it, a fitting tribute to the rifle.

Another reason for not having a custom gun built is, like the others, a bit controversial. A few friends have had numerous custom jobs done for investment purposes. Presumably, they expect that, with the passage of time, the value of the guns will appreciate. Frankly, I think they are just using that premise to justify, to their wives, ordering another custom gun. The fact is that, unless one is really lucky, custom guns are not necessarily good investments. Logically assessed, it makes good common sense, as to why this is so: Why would *anyone* pay the replacement cost, or even more, for someone *else's* custom gun? For the same amount, you could have one crafted specifically to your own wishes and desires.

I make a practice of attending most of the gun shows in the local area. One

I make a practice of attending most of the gun shows in the local area. One old fellow had a table full of custom rifles, at every show I attended for several years. The rifles were very nice, although well-known makers had crafted none of them. Still, each and every one was a high-quality piece. The prices he was asking for the rifles were more than reasonable — really, they were quite cheap. Not one that I saw could have been replaced at anywhere near his asking price. In fact, most were priced at about the cost of their raw components, the action, the barrel, and the stock blank. Even so, I saw the same rifles on his table, show after show. I suppose he sold the odd one every now and again, but, mostly, when the show was over, he took them back home. He had his table at the last show I attended, still full of rifles.



A major reason, but not the only one, that I hunt with my custom rifles is simply that they are more accurate, more dependable, smoother functioning, and less apt to have failures than an out-of-the-box factory rifle. I want to keep the odds of experiencing any kind of problem with my rifle as low as I can. This Alaskan brown bear is the only animal in my long hunting career that decided to take me on. It took three .338 Win. Mag. bullets from me and three .375 H&H bullets from my guide — all in the right place, I might add — to end the fracas. My custom Winchester Model 70 functioned flawlessly.



While I've not personally had any difficulty with any of the four Cape buffalo I've taken to date, they can and do hand out about all the excitement one can handle in a day. This past year, as I was crafting this book, I personally know of three professional hunters who were killed by angry buffalo, and the buffalo shown here was taken about a mile from where a guest hunter was killed by another buffalo. All the more reason to use nothing but the best, most dependable rifle you can get. I used a custom pre-'64 Model 70 chambered for the .458 Lott.

It should go without saying that had he displayed, at those prices, examples from John Bolliger, David Miller, Steve Heilmann, D'Arcy Echols, or any one of numerous other gifted makers, they would have been gone in a heartbeat. Hell, I would have mortgaged the farm and bought them all myself. However, his loss on each piece would have been greatly increased, even if he'd sold them instantly. That points out, graphically, why investing in custom guns is not always a good idea.

If great improvements in accuracy and function are not valid reasons for having a custom job done, and in this scribe's opinion they aren't, what, then, are the cogent reasons? I can say, with confidence, that there are far more

reasons to have such a rifle built than not.

As I mentioned earlier, the primary reason for placing an order for a custom rifle is that the buyer wants one. That is an inarguable motivator and the primary justification for most of my personal custom rifles. The only undebatable argument against having one built is the cost. Sadly, not everyone can afford to have a rifle built to their specifications. Impeccable, meticulous work doesn't come cheaply. Personally speaking, I would have many more custom rifles in my rack than are there, if only I could afford more. In my case, that's the only reason that I don't have a vault full.

What, then, are the reasons, other than want, to put a deposit down with a builder and sign on the dotted line? One is fit. Factories design their rifles to fit the mythical "average" person. Details such as length of pull, drop at the heel and comb, length of forearm, cast on or cast off, and the like are standardized to fit the average Joe. I don't know how the manufacturers arrive at their standard dimensions, but they do a pretty good job of it — either that, or we shooters simply adapt to the dimensions we're provided. Most out-of-the-box factory rifles match my personal requirements pretty well.

Physically, I guess I must coincide with the average mold pretty well. I'm six feet, two inches tall, weigh about 200 pounds (okay, 215), and wear a 33-inch sleeve. I do not feel handicapped using the standard dimensions of a factory rifle. Stocks are usually a bit on the short side for me, but adding a recoil pad generally fixes that issue nicely. As I said, people are very adaptable to most any situation. Yet, for most women, a uniquely short or tall person, or someone who is physically challenged in some way or has "atypical" physical dimensions, a standard factory rifle might not work very well. The majority make do with what's available anyway. After all, most field situations allow sufficient time to struggle with a rifle that really doesn't fit and get into position to fire the needed shot. An ill-fitting shotgun in the field is another matter, but standard rifle dimensions work pretty well for just about all users.



Another Bob Evans-engraved rifle from the Gary Goudy shop. The owner of this rifle wanted something more than an out-of-the-box factory hunting rifle. The team of Evan and Goudy provided that “something more,” by a considerable margin.

How we learn to shoot makes a difference. For example, most European-made rifles have longer stocks (length of pull), than do American-made rifles. I worked as a consultant to a major German rifle manufacturer for some 17 years or so. Its standard factory dimension for length-of-pull was 14½ inches, whereas the U.S. standard is about an inch less. Try as I might, I could never get the company to change it. They simply couldn’t understand — or were too stubborn to accept — that their stocks were too long for the average American shooter. The reason was simple: European shooters are taught to shoot with their heads erect on the stock, while American shooters tend to “crawl” the stock, so that their cheeks firmly weld against the comb. That is also the reason, by the way, normal European scope mounts are much higher than American mounts, as well as one of the reasons that, up until rather recently, scope “eyebrow” was

considerably more prevalent among users of European-manufactured scopes than among users of American-made scopes.

To get a rifle that really fits, the custom route is the only way to go. The selected maker will measure a client precisely and craft a rifle to exactly fit the need. No longer will the rifle butt catch under their armpit when shooting a rifle too long. Nor will they bash their noses or lips with their thumbs when it is too short. Lo and behold, when they shoulder their rifles, they won't have to manipulate their heads to bring their eye in exact line with the scope. It will *be there*, automatically. Then and only then can the shooter concentrate on the target to the exclusion of everything else. That is the beauty of using a rifle that fits, rather than adapting to one that doesn't.

Another reason for having a custom rifle built is to get one chambered for a cartridge that isn't produced in the available factory products. Many, mostly advanced shooters, delight in cartridge development. They do so with all the fervor of Edison working on his light bulb. Even so, I can't think of a gap in the readily available calibers on the market. Whether the quarry is a cottontail rabbit or a *Jurassic Park* dinosaur, perfectly suitable and effective cartridges are available over the counter from the numerous manufacturers. Even so, if a given shooter has developed a .30 Super Wazoo Maxi-Mag and wants a rifle chambered for it, why not! Someone once said that variety is the spice of life, and although I don't believe the speaker was referring to rifle cartridges, the wisdom applies.

I have a few friends who constantly work with rifles and loads and try to come up with a magical cartridge that will lay everything low at the mere mention of the name. Others do so just to have their names on a cartridge. Their creations, though but ballistic clones of a half-dozen or more readily available cartridges, are quickly dubbed the .396 John Doe Pooper Scooper or some such nonsense. Claims of velocities approaching the speed of light are commonplace around the campfire. If such balderdash makes them happy without their nose growing longer, why not? At least it rarely does any harm. Of course, such a

brainchild won't kill an animal any quicker or deader than the ancient .30-06 or .270, but this fact doesn't enter into the equation. That is what they want, and as long as they can afford to have one built and can find a maker to build it, more power to them. Listening to claims of the superiority of their development sometimes give me a case of hives, but what the hell!



Here are two custom jobs on display after a Coues deer hunt, in Mexico. On the right is Jack O'Connor's No. 1 of a pair of .270 rifles. It and the No. 2 mate were his favorite rifles. Its present owner, Henry Kaufman, shot a Coues buck and a javelina with it on this hunt. The rifle on the left is my old David Miller .270 that has, literally, been around the world with me a couple times. I also shot a nice Coues on the trip.

The major reason for having a custom rifle built, though, is not only to have a tool for hunting, but also to have an example of exquisite craftsmanship to be appreciated. A rifle, any rifle, spends far more time in the rack than it does in the field. Likewise, an average hunter spends far more time in the den than in hunting camp. A fine custom rifle is something that can be admired, night after night, and shown off to friends when swapping tall tales of derring-do. Somehow, a paneled den, a few sundowners, and a custom rifle just seem to *go* together. The glow of hand-rubbed walnut, precise checkering, and flawless execution fit the mood. The mirror finish on a factory product would be out of place, not unlike a hooker in work clothes showing up at a church social.

I have a friend who has a wonderful collection of custom rifles. I don't believe any have ever been in hunting camp. Instead, his hunting rifle is a synthetic-stocked factory model. He is a collector of fine custom rifles, but not a user. There is absolutely nothing wrong with that, although I couldn't personally do it. I'm convinced that, even if he could be persuaded to take one of his custom jobs to the field, he wouldn't enjoy the hunt. He would be far too busy worrying about putting a ding or a scratch on one of his creations to relish the experience.



I took this Boone & Crockett pronghorn antelope, in New Mexico, using a semi-custom Dakota Model 97 rifle that Don Allen made for me. Chambered for the 7mm Dakota proprietary cartridge, it was needlessly powerful for the fragile pronghorn. I took the rifle along thinking about the possibility of a long shot. How long was the shot? Under 100 yards!

Contrast him to another pal of mine who has but one custom rifle, a .375 H&H. When he treks off to Africa on another safari, he takes that one rifle. He figures his .375 will handle anything he needs to sort out — and it always has, to date. After several such trips, the rifle has accumulated a few honest scars, yet, there is no way this pal would have the scars repaired. To him, they are marks of honor.

I am a great admirer of custom guns in general and custom rifles in particular. I delight in showing my friends the results of many hours of highly skilled labor by various extremely talented makers. I take great pride in my modest collection of custom rifles that has taken me a lifetime to obtain. Yet my custom rifles were made to work for me, not simply sit in the rack to be admired.

My pet of pets is a rifle that was not even built for me. The original owner

My pet or pets is a rifle that was not even built for me. The original owner must have been exactly my size, though, because the rifle fits me like a glove. It is chambered for the .270 Winchester, my favorite cartridge and one I've used far more than any other.

I was busier than a one-legged man at a butt-kicking contest, preparing to leave on a combination moose and caribou hunt in Alaska, when David Miller called about the rifle. Miller's shop is in Tucson, about 75 miles from my home in southeastern Arizona. With my departure for the hunt barely two weeks off, I just didn't have enough time to drive to Tucson to see the rifle. Miller gave up some of his shop time and brought it to me. The rifle was in pristine condition, and though it had a ding or two here and there, it had obviously been used very little. We made a deal, and David took the rifle back to his shop to clean it up for me. Three days before my departure, I took the rifle to the range and got it properly sighted. The first three-shot group I fired measured just .740-inch, remarkably accurate by anyone's definition.

I simply had to take it with me on the hunt, although I concede that the .270, as good as it is, is not an ideal moose cartridge. It is fine for caribou, but pretty light for a 1,500-plus-pound moose. Even so, I had previously lived in Alaska, and I'd subsisted on moose meat for a couple years. I knew that, for such a large animal, the moose has a glass jaw. A properly placed, well-constructed bullet of just about any caliber *will* cleanly take a moose. I took the rifle with me and, 10 days later, I had my moose and caribou in the meat locker.

A year later, I had the same rifle with me on a combined mule deer and antelope hunt in Wyoming. The camp was located on Savery Creek, not far from Baggs, close to the Colorado border. It was during this hunt that I made the two longest shots on game I've ever attempted.

Savery Creek country is, to this Arizonan anyway, a rather odd combination of features. It consists of somewhat flat country down where the creek flows, then merges into very steep and rugged hillsides, which rise several hundred feet up from the valley floor. Once on top, these hills even out into billiard table flat sage brush country.

sage brush country.

I am not a believer in long shots at game. I learned long ago that long shots generally result from laziness or poor hunting techniques. There are exceptions, but not many. It's pretty unusual that the hunter cannot get to within reasonable shooting range of an animal. In addition to that, if, in fact, it is impossible to get closer, taking a chance on an exceptionally long shot is rarely justified. Unless the animal is really exceptional or previously wounded, the hunter should pass on the shot. Blazing away at 105mm howitzer ranges usually results in either wasted ammo or, far worse, a wounded animal.

Anyway, my guide Ed and I were up on top of a bluff, well before daylight. From our vantage point overlooking an area where Ed had seen many good bucks, we awaited the dawning of the new day. As it became light enough to see a bit, not a lot was moving, but, on a distant hillside, we could barely make out a couple of deer. They were so far we couldn't tell if they were bucks or does, but still, we thought it would be worth hiking over for a look.

We'd left our vantage point and started working our way in the direction of the deer, when the Ed froze up like a setter on point. There in the sage flats were two bucks staring directly at us. Where in the dickens they'd come from was a puzzler — they had just seemingly appeared out of thin air. And magical appearances or not, one of the two bucks looked to be a real shooter.

Ed whispered that the bigger buck was super, but had already spotted us. There was no way in that flat sage we could get any closer, so, if we were going to try for him, it would have to be from where we were.

When Ed said that to me, I looked at him as though he had three heads! To me, the buck appeared to be at least 800 yards away, and I said so. Ed said no, that it was closer to 500. He informed me that the early morning light here was very tricky and made accurate range estimation very difficult. I didn't tell him that I had trouble accurately estimating range on a well-marked football field! Anyway, he felt the buck was good enough to justify such a long shot.

As luck would have it, there was a fencerow not more than 20 feet in front of us, so I eased over to a post and took a rest. It was almost as solid as a concrete

us, so I eased over to a post and took a rest. It was almost as solid as a concrete shooting bench. I aligned the scope's horizontal crosswire at the top of the buck's antlers, the vertical wire on his shoulder. At the shot, the buck didn't move. Standing in the sagebrush as he was, I knew the shot had been high. Had it been too low, we would have seen the bullet strike the sage. I lowered the horizontal wire to the top of the buck's head and the second shot killed the buck in his tracks. He went down so fast, we had a heck of a time finding him in the sage.

As it turned out, we paced the distance to the buck and found that he was a little over 400 yards, not 500 or 800. In addition, he was not nearly as huge as we had thought. He had really fooled us terribly. Knowing my rifle and its ballistics enabled me to make the shot, but poor range judgment almost caused me to blow it. Yet, as a result of this experience, less than 24 hours later, I dropped a big buck pronghorn antelope under almost identical circumstances, except he was 100 yards further away!

Since these hunts, this rifle has been with me around the world. With it, and among other animals, I've taken kudu, impala, bushbuck, and warthog in Africa; several antelope and mule deer in Wyoming and Montana; caribou and moose in Alaska; Coues deer in Mexico; and roe deer, chamois, and red deer in Germany. When I returned from my last African safari with that rifle, I took it to the range to check the zero. Even after riding several thousand miles in various airplane cargo bays and being loaded and unloaded by numerous ham-fisted baggage handlers who could break an anvil, the first three-shot group measured .263-inch. This is one of the smallest groups I have ever fired with any rifle, much less a lightweight sporting model.

The rifle is now in semi-retirement. It has paid its dues many times over. I have often considered sending the rifle back to Miller, to have him restore it back to its original, pristine condition. It would take very little to do that — a little touch-up on the checkering, another coat or two of finish on the stock, and a new barrel. The original is pretty well shot out these days. Yet each time I get this thought I look at the honest scars of use, not abuse. Each scar has a story

and thought, I look at the honest scars of use, not abuse. Each scar has a story and a memory. I think I will let it be.

This is one of the major joys of owning and using custom rifles for me, and I don't think I'm all that different from most enthusiasts. I suspect that most orders for a custom job are based upon similar motivations. I can't imagine having comparable feelings for a factory rifle.



I was asked to sort out this bull by the Tanzanian Game Department. When we saw him, he was badly crippled. We thought a poacher had wounded him. Less than a mile away and a year earlier, just such a buffalo had killed Bob Fontana, a Canadian hunter, and the game department would take no chances with this one. Once sorted out, we learned that the bull had been wounded most likely by another buffalo and not a poacher's bullet. My .458 Lott handled the situation without incident.

There you have it, one person's opinion on how to justify a new custom rifle and what not to use as an excuse. As I see it, there are three fairly valid grounds for not ordering a custom rifle. The first and most obvious is that such a rifle is

unaffordable. Second, a custom rifle shouldn't be ordered to overcome poor shooting. No custom rifle, no matter how well done, can accomplish that. Third, custom rifles will not generally function any more positively than a factory product. Smoother and slicker yes, but both should function error free.

The reasons *for* plunking down a deposit on a custom job, on the other hand, are many. The rifle styling, while representative of the selected builder's work, is also a reflection of the buyer. The choice reveals the buyer's taste (or lack thereof). The choice in rifles says much about one's general personality. The individual whose taste in rifles runs to what I like to call "quiet elegance," generally prefers subdued refinement in all other aspects of their life, say, a muted color sedan for an automobile, and blues, grays, or browns for clothing; not a single plaid will be found in their wardrobe. The gentleman who prefers high-gloss finishes, thumbholes, and rollover combs on his rifles will often be seen wearing a Tartan print sweater and driving a sports car painted international orange. There is nothing wrong with either — it's all just a matter of taste and personal choice.

3

The Custom Stock

The most important feature of any custom firearm is its stock. That is one statement I believe will not be seriously challenged. So important is this one component that there are thousands of so-called custom rifles out there that have had nothing done to them other than the installation of a new stock. Technically, these rifles are not custom rifles, but are rather merely custom stocked. Let's not argue over semantics, though. Thousands of dollars in labor devoted to magnificent and precise metal work is often overlooked. The stock, on the other hand, is always noticed one way or the other. It is the stock that reaches out and grabs you, whether positively or negatively.

There are many facets of a custom stock that make one so distinctive. First is the material from which it is crafted. Second is the shape and styling. Third is the finish and checkering. Finally, there the accessories or other decorations.

The Wood

For many years, there was only one stock material: wood. There are many different types of wood more or less suitable for making a stock, but only one is essentially ideal. That one is one of the many subspecies of thin-shelled walnut (*Juglans regia*). Almost, but not quite as good, are American black walnut (*Juglans nigra*), claro (*Juglans hindsii*), and Bastogne walnut (*Juglans regia* x *hindsii*), all three of which are used for gun stocks. Maple and mesquite have been used successfully, and many factory stocks on inexpensive firearms are made from other hardwoods that have been stained to look like walnut. Myrtle

(*Umbellularia californica*) has been used as a raw material for stocks, and so have some exotic species such as koa, yama, and rosewood. The best of the stock woods, however, is still and most likely always will be *Juglans regia*.

Although called by many names — French, Circassian, California English, and Turkish, to name a few — it all comes from the same tree. It is only the location where the tree is grown and the growing conditions that are different. France, Germany, Russia, Iran, Turkey, New Zealand, Morocco, and heaven only knows where else have all provided excellent walnut for stocks. Each country has also, alas, provided some pretty sorry stuff. For an American, the source of some of the best stock blanks is the state of California. Usually called California English, this wood is readily available from a multitude of dealers. The best of it is so good it will make a strong man cry.

One reason California produces so much good wood is that the cutters there generally know what they're doing, when they cut logs into future gun stocks, a talent that's often lacking in other locations. Some years ago, I saw a batch of blanks from Morocco. The wood was really beautiful, with superb figure and color, and it was hard and dense — all the natural qualities required for superior stock blanks. Unfortunately, it was all very poorly cut and, for all practical purposes, had been turned into very expensive firewood. It was really sad to see. I have seen the same problems with walnut cut in several other countries.

Another problem with walnut is that it is expensive. Because of this, many cutters minimize the size of the blanks, obviously to get more blanks out of a given log. But, by doing that, the stockmaker is left with little choice in laying out the stock. If the blank wasn't properly cut at the mill, there aren't many ways, if any, to correct the mistake. Most of the California mills seem to know what they are doing, when cutting the blanks. The millwrights don't leave any more excess to work with than do the others, but they generally cut the blank correctly.



Photo courtesy Kevin Dilley

The epitome of a classically styled custom rifle crafted by one of our very best makers. It features clean, uncluttered lines, with nothing extraneous to the rifle. No one feature reaches out and grabs you, but the rifle as a whole certainly does. This rifle is a .338 Win. Mag. built on a 1909 Argentine Mauser action.

Rifle by D'Arcy Echols & Co.



Photo courtesy Terry Wilcox/Wilcox Walnut

Seven danged nice short blanks for shotguns or two-piece rifle stocks. These are all exhibition grade blanks of Turkish walnut, and their combined cost would make a hefty down payment on a high-end car or truck. I'd be hard pressed to decide on which one to pick.



A very nice stick of quarter-sawn English walnut with a bit of fiddleback figure in the fore-end. It has nice color, the layout is excellent, and I would guess that, on a XXXX scale of grading, it would grade about XX by a conservative grader and, perhaps, XXX by an optimist. This blank would make an excellent stock, though not one overly flashy. Functionally, it would make a better stock than most of the highly figured blanks one sees.

It is important to remember that a beautiful and expensive blank is not necessarily a good one. The grain structure must be correct; a good stock cannot be made from a bad blank.

As an example, several years ago I started shivering and breaking out in night sweats, even though the temperature was very mild. When my dog started howling at the moon in response to my odd behavior, I knew there was another bout of custom-itis coming on. Except for a suitable stick of walnut, all the components for a custom rifle project to cure this malady were on hand. I saved

a quarter or two here and there from my beer money allowance and eventually got to \$100. That was the price for an AAA fancy European walnut blank from Flaigs, in Millvale, Pennsylvania (and that price will give you an idea how long ago this incident took place).

The stick I received in return for my order was a beauty, with excellent figure and color. Sadly, it was skimpily cut, leaving no maneuvering room to lay out the stock. As beautiful as it was, I returned the blank to the supplier. It was a spectacular piece of wood, hard and dense, but whoever had cut the blank had done so exactly upside down. The grain through what would have become the grip of the stock flowed precisely opposite to what it should have. Had that stick been made into a stock, it would have broken at the grip in no time. The supplier replaced the blank with another not nearly as beautiful, but infinitely better functionally.

Claro walnut, also from California, is consistently beautiful wood. I'm sure there must be some plain claro grown, but I've seen very little of it. Most I've seen has been drop-dead gorgeous, with lots of figure and color. It is also normally very porous and usually brittle, but I have seen some really beautiful stocks crafted from claro.



Photos both pages courtesy Terry Wilcox/Wilcox Walnut

Here's a pair of blanks that are rare as hen's teeth. These two blanks were cut from the same tree in France, in 1983. Genuine French walnut is almost nonexistent, now. I doubt that there is a single walnut tree still standing in France these days.

Another type of walnut is a hybrid cross between *Juglans regia* and *Juglans hindsii*, called Bastogne. It is hard and dense and makes excellent stocks for rifles chambered for heavy-recoiling calibers. Bastogne is often rather plain in figure, not all that flashy, but really good stocks can be fashioned from it.

Curly maple has been used for stock wood since Colonial times. Maple was apparently the favorite stock wood of our early rifle builders. The late Hal Hartley, a custom maker from North Carolina, specialized in making stocks from this wood. He made many of them, and they were very good indeed. He most often used the flame from a blowtorch to bring out the figure of the wood, a process called "suigi finishing." Most maple trees have little figure, and its wood is mostly white. Some trees, however, have ample figure in several designs. I've

is mostly white. Some trees, however, have ample figure in several designs. I've seen stocks made with curly figure, probably the most commonly encountered figure pattern, but also tortoise shell, bird's eye, and quilted patterns. The wood is still white, but the torch or a good stain will both bring out the figure and add color to wood.



This photo shows the difficulty in finding a truly matched pair of stock blanks. These two short blanks and fore-end blanks are obviously from the same tree, only a few inches apart. Yet, if they were separated and shown individually to a potential client, I'm sure there would be difficulty in convincing that client they were a matched pair.



A right-and left-side view of a very wild-grained stick of Turkish walnut. It is certainly exhibition grade and would be priced accordingly. While it would make a great stock for a shotgun or single-shot rifle, had it been cut one-piece rifle stock length, it probably wouldn't work functionally. It is always more difficult to find a fancy long blank that will make a functional stock, than it is a short blank.

Roy Weatherby stocked many of his heavy-caliber rifles in mesquite. In Arizona, where I live, the tree is common. The Arizonan variety of mesquite, however, never grows very large, so where Weatherby found a source of mesquite large enough for stock blanks is a mystery to me. It was and is a very interesting wood, and the few stocks I've seen fashioned from it were very good and quite striking in figure. The last time I visited Frank Wells in his Tucson shop (long since closed), he had a couple mesquite blanks on hand. I don't know where he got them, as I didn't think to ask.

Arguably, the best material for a gun stock, particularly one that will be used and used hard in all weather conditions, is not wood at all. Instead, it is a combination of synthetic materials, the majority of which will be fiberglass. Other materials, such as Kevlar, are also used. These materials are inert and so will not absorb moisture and will not swell, warp, crack, or shrink. They are impervious to the elements that affect wooden stocks so drastically. About the

only thing that can sometimes make a synthetic move is heat, and lots of it. Synthetic stocks aren't pretty, at least in my eye, but they are practical for a working rifle. Generally, they have a painted finish and, as such, can be ordered in about any color or combination one wants. They are also available with molded-in colors in various colors and patterns. A development that was somewhat popular a few years back was a system of imparting a wood grain finish to the synthetic surface. A synthetic stock so finished is very difficult, even for an experienced observer, to distinguish from a stock of fine walnut. It is only when it is handled that the difference is readily apparent.

Why, then, with all its attributes, doesn't everyone use synthetic materials for their stocks? Well, I can't speak for anyone but me, but my objection is that a synthetic stock has all the warmth and feel of a cadaver. Cheeking a synthetic stock, particularly on a bitter cold day, is not one of life's great pleasures. To me, they have no soul, like that of a walnut stock. I own and occasionally use a few synthetic stocked rifles, but I'm very careful who knows about it!



Photos courtesy Terry Wilcox/Wilcox Walnut

Somewhere between these stock extremes are those made from laminated wood blanks. The suppliers make them usually from many, many thin pieces of wood glued together under heavy pressure, similar to how common plywood is formed. The resultant blank has many advantages of both wood and synthetic stocks. A laminated stock resists the effects of moisture almost as well as a synthetic stock, but retains the warmth and feel of a fine wood stock. Such a stock has but two downsides. First, they are heavy. That isn't necessarily a downside for a big-bore heavy kicker, but it sure won't work for a lightweight mountain rifle. Second is its appearance. When laminates first came out, most makers of the blanks used alternating layers of walnut and maple. The stocks looked like zebras. Much more common today are blanks made from layers of walnut or other hardwoods and, for my taste at least, they are much more attractive. There is also a maker or two who use only a few plies of much thicker wood, usually all from the same blank. In doing so, they use a much better grade of walnut and the resulting stock doesn't look much like a laminate. Several custom makers are using laminated stock on their semi-custom models, and major manufacturers are also using them on selected production models.

Stock Shapes and Styling

The second important facet of a custom stock is its shape and styling. In broad terms, there are three basic categories, the so-called California style, the classic style, and what I will arbitrarily call "the other style."

Traditionally, Roy Weatherby has been credited with popularizing the California rifle stock design. Characterized by Monte Carlo combs, high-gloss finishes, skip-a-line checkering patterns, angled and trapezoidal rosewood fore-end tips, rollover cheekpieces, sharply curved pistol grips, and diamond-shaped plastic inlays, they were the cat's meow for a while. This stock styling seemed to be at its peak of popularity during the era when American automobiles featured fishtail fins and chrome-plated everything. The trend in gun stocks of this style even moved across the Atlantic to Europe, with some European manufacturers producing rifles with stocks clearly modeled after the California influence.

producing rifles with stocks clearly modeled after the California influence. Several custom makers, most noticeably Monty Kennedy and Leonard Mews, turned out fine custom stocks unmistakably influenced by this style. Of course, both men did custom work in California, and at least Mews did several stocks for Weatherby.



Both sides of another stick of Turkish even fancier than the previous stick. This blank would fit the description of “exhibition grade, special selection,” if there were such a thing. One would be hard pressed to find a fancier blank than this one.

The category that I arbitrarily label as “the other style” is even more bizarre, at least for my taste, than the California school. One of the most notable features of many of the “other” rifle stocks is a thumbhole design. I will begrudgingly admit that the thumbhole stock is pretty comfortable in use, but they surely aren’t my cup of tea visually. It’s a free country, and paying your money to get what you want is a keystone principle here, as it should be, but I get nightmares just thinking about such a stock.

The stock styling that has been around since Colonial days is the classic style. There are as many different versions of this style as there are custom

makers, but the differences are minor, while the basics remain essentially the same, regardless the maker. Perhaps the greatest proponent of the classic stock was Jack O'Connor, arms and ammunition editor for *Outdoor Life* for more than three decades and America's best-known outdoor writer. Any other stock styling gave him the "vapors." O'Connor wrote in his book *The Hunting Rifle*:

Morgan Holmes, New Jersey stock maker, once wrote that the lines of a handsome rifle stock should either be straight or they should be segments of a circle. I think he has something there. I think also that the rifle stock should be judged not only by its utility, but by the whole effect it gives. Any feature which detracts from the whole effect by attracting attention to itself is out of place. Any feature of the rifle stock that is put on for show and is plainly non-utilitarian also detracts from the overall beauty of a stock. That is why I do not care for carving, white spacers, gold plating, fancy inlays, and bizarre and exotic shapes. But anyone is entitled to spend his dough as the spirit moves him.

O'Connor, the master of words that he was, also wrote something else in the same book that I have always remembered. He penned:



Photos courtesy Terry Wilcox/Wilcox Walnut

Sometimes very slight changes in curves and angles make the difference between a beautiful and graceful stock and a homely and ordinary one. I am thinking now of two sisters I once knew. Both were blond, witty, and charming. But one (though she was a fine cook and had a heart of gold) was a rather ordinary-looking lass who got by on her good disposition and winning ways. The other was a tearing beauty, a creature so lovely that one look at her sent young men's blood pressure skyward and set them to uttering wild, hoarse cries and tearing telephone directories apart with their bare hands. Yet actually those two girls looked much alike. It was easy to see they were sisters. What made the difference was an angle here, a line there, small dimensional differences in eyes, noses, and mouths.

So it is with many things, including custom gun stocks.

A properly executed classically styled stock is utilitarian, efficient, unobtrusive, and quietly elegant. It minimizes the felt effects of recoil and never goes out of style. It requires no embellishment to be beautiful, save a well-

executed checkering job. For my money, classic styling is the only way to go.

Checkering was originally a strictly utilitarian feature of a stock, one added to improve the shooter's ability to grip the firearm firmly. Over the years, checkering has evolved into a decorative art form, even though its strictly functional design is still necessary; a stock without checkering looks unfinished. Although there are infinite variations, checkering patterns are basically one of two types, point and *fleur de lis*. I like both patterns and have examples of each type in my rack.

Point patterns have been around since there has been checkering on stocks. Just who originated the *fleur de lis* variation, I'm not sure. It may have been Al Linden. If he wasn't the originator, he was one of the first I'm aware of to use such a pattern on a stock. The fellow who made the pattern most famous, though, is Al Biesen. Biesen used it so often, it has almost become a trademark with him. He undercuts the pattern, recessing the checkering below the surrounding surface of the wood. He is the only custom maker I know who does that. I think it looks pretty spiffy.

Good checkering running 22 to 26 lines per inch is all the decoration a fine, classically styled stock needs. Checkering that is coarser than 22 lines per inch, while perhaps slightly more functional than the finer variety, is too coarse for my tastes. On the other end, checkering finer than about 26 lines per inch loses its functional utility. Good checkering is characterized by a pattern in which each diamond is identical in size and shape and all the diamonds are sharpened to precise points. With one exception, there are no flat diamonds in a good checkering job. That exception is in the case of an English flat-topped checkering job, wherein all the diamonds are intentionally left flat on their tops. Needless to say, there are no runovers in either style; when such bad work is present, the marks stand out like a giraffe with a goiter! Borders around a pattern are generally frowned upon as a cover-up for runovers, and they can be just that, but even so, I think that some, if not most, point patterns look best with a simple mulled border.



Most wood dealers would probably grade this blank of English as XXX grade. The layout is excellent, with nice straight grain through the fore-end and wrist. However, the stockmaker using this blank would have to watch his Ps and Qs, as the sapwood is precariously close to the comb of the eventual stock. I think it will work fine, but there is a risk, and one cannot see inside the blank with any certainty without cutting into it.



This blank is a very plain and light-colored stick of English. The layout is just fine, and some stockmakers prefer the slight upsweep of the grain in the fore-end at the tip. It would make a very functional stock that would work well and last for generations. However, the cost of converting this X-grade blank into a fine custom stock is exactly the same as making a stock from an “exhibition grade, special selection” blank. I’m not recommending against it, just giving an additional consideration.



A feather crotch grain blank of American black walnut. Winchester used a lot of feather-grained black walnut on their higher grade guns, both rifles and shotguns. This stick would be good for restocking a Model 21 shotgun or one of the higher grade lever-action rifles. Due to the layout emphasizing the feather crotch figure, it would not be the strongest through the grip area, and the stockmaker would most likely want to reinforce the grip.



Photos both pages courtesy Terry Wilcox/Wilcox Walnut

This is a super-fancy blank of Turkish walnut. As best I can tell from the photo, it appears to be quarter-sawn and, for such a fancy blank, the layout isn't too bad. For a guy who wants flamboyant wood, this would be a good candidate. It would make a stock sure to stand out in the crowd.



I can't tell for sure from the photo, but this looks like a stick of European walnut that I'd grade around XXX for figure, but XX for layout. As can be seen from the shape, the sawyer intended for it to lay out in the opposite direction. Layout through the grip area is excellent, but not so hot elsewhere. If I were in the market, I think I'd pass on this one. It would be a striking stock when finished, just not the strongest.



Photo courtesy Gary Bolster

I've seen lots of unusual things over the years, but this is the first custom-stocked Daisy BB gun I've ever seen, and with exhibition-grade walnut at that. Gary Goudy stocked the rifle.

The only problem with checkering, other than poorly designed and executed patterns, is that some makers use their outstanding checkering abilities to over-embellish an otherwise superb stock. Too many ribbons, arcs, corners, and curlicues, while difficult to execute perfectly, tend to look overdone and out of place to me. Such work reminds me of a farmer dressed in bib overalls who wears custom-made alligator boots! Individually, there is nothing wrong with either bib overalls or alligator boots, they just don't go together.



Photo courtesy Steve Helsley

Steve Heilmann crafted this stock for a Winchester Model 63, from an exquisite stick of Turkish walnut. He also did the extensive metalwork involved in the project. Denis Reece engraved the finished rifle. Exhibition-grade Turkish walnut on a .22 rimfire a bit of overkill you say? This rifle sold for well in excess of six figures!



Curt Crum, of David Miller Co., sanding a stock prior to starting the final finish. Quite a few hours of drudgery goes into the proper sanding of a stock, before applying the first of many coats of finish.



This fleur de lis checkering pattern, as executed by Curt Crum, is nearing completion. Two or three more passes with handtools and a coat or two of finish, and the checkering will be complete.



Curt Crum working on a point checkering pattern on this David Miller Co. Classic rifle. Crum's checkering is, like everything else he does on guns, flawless.



Curt Crum busily engaged in one of his meticulous checkering jobs on a Miller Classic stock. Crum normally does his checkering at home, where visitors, phones, etc., do not distract him. He brought his checkering setup into the shop just for our photo session.

Neither do quietly elegant classic stocks and high-gloss polyurethane finishes. Rather, it is the classic stock and hand-rubbed oil finish (or the present day technological equivalent), that go together like ham and eggs. In case you think I've been behind the moon for half my life, I do know that genuine oil finishes (linseed oil, that is), are practically never found anymore. Technology has produced compounds that look just as good as a genuine oil finish, but overcome the disadvantages of this finish, hence my caveat here. Pure oil finishes are beautiful and easy to repair, no doubt about that, but they do not effectively seal the stock from the elements. Too, an oil finish takes forever to dry, is soft, and is much more prone to damage. Modern technology has developed various plastic "oils" that provide the beautiful satin sheen of a hand-rubbed linseed oil finish and effectively fill the pores of the wood, so drying to a hard, resistant surface. Know, too, that the perfect stock finish is the Holy Grail of the custom gun business. I don't know of a single stockmaker who is totally happy and satisfied with the finish they use. All I know are still searching for that perfection

and perfection.



Photo courtesy Keith Heppler

A fantastic job on an extraordinary piece of English (or possibly Turkish) walnut, by one of the true

veterans of the custom gun business, Keith Heppler. Keith is pretty much retired these days. His contributions to the trade over the years are many too many to mention. He will be missed.

Wearing red-and-white argyle socks with a tuxedo would, to most observers, be considered out of place and inappropriate. To my way of thinking, so are white line spacers, exotic wood inlays (or, even worse, ivory, pearl, or abalone shell), and zebrawood fore-end tips on a classic stock. Everything about a rifle must mesh with the whole and, if it doesn't, it is inappropriate. A feature of the stock, if missing, should be noticed, not the other way around.

Everybody has a right to spend their money on what they want. If a customer demands a stock whittled from grafted butternut, with an inlaid mother-of-pearl cheekpiece, why not? Somewhere out there is a maker who will give the customer what they want. The fact that such a piece gives me hives just thinking about it is of no consequence. After all, it isn't my money. That's the beauty of the custom gun business. No matter how bizarre (or common) their tastes, all can get what they want.

Al Biesen once told me a story about the first stock job he did for Jack O'Connor. The year was, as I recall, about 1947. The rifle O'Connor sent Biesen for stocking was a 1903 Springfield .30-06. According to Al, he worked his butt off getting everything just perfect on the job, just as he always does. Because he had never worked for O'Connor, he finished the stock with a high-gloss finish and fitted white line spacers between the fore-end tip and stock, as well as between the grip cap and grip. O'Connor damned near birthed a litter of horned toads when he saw the finished job. He carped at Biesen for years afterwards about it, even though the mistake was never repeated. In all fairness, I saw the letter of instruction O'Connor sent along, and also a photo of the finished rifle. There were no mentions in the instructions about stock finish or white line spacers.

For me, an elegant classically styled stock from David Miller and Curt Crum, Roger Biesen, Jerry Fisher, Gary Goudy, Duane Wiebe, Joe Smithson, Ralf Martini, Reto Buehler, James Anderson, Darcy Echols, Steve Heilmann, or any

number of other fine makers will do just fine. With any of these makers, it is guaranteed I will get exactly what I want, with not a single white line spacer — or red-and -white argyle sock — to be found anywhere.

4

Custom Metalsmithing

The most underrated component in building a custom gun is the metalsmithing. Stock work immediately attracts attention. Fancy checkering patterns, meticulously executed, are sure to elicit *oohs* and *ahhs*. A stock crafted from a beautifully figured and colored stick of walnut will snap heads from across the room. Yet, an integral quarter-rib, front sight ramp, and sling swivel stud, all milled from a single, oversized barrel blank, hardly motivate a smile. The fact that a very talented 'smith spent many, many hours improving the workings of an already excellent action often goes unnoticed. I suppose the aficionado simply *expects* the action to be glass smooth and function flawlessly. Believe me, it didn't get that way by accident!

Unseen Work

The reason superb metalwork goes largely unappreciated is that much of the results of the work cannot be seen. Even if the work *is* visible, it is difficult to detect that a quarter-rib has been machined from an oversized barrel blank. A quarter-rib precisely machined from a piece of bar stock and carefully soldered to the barrel, when masterfully done, looks precisely the same. The same can be said for front sight ramps, sling swivel studs, extra recoil lugs on the barrel, and other touches.

Much of the action work is performed internally and greatly improves function, but not aesthetics. Sometimes, but not often, an action is modified in appearance. Typically, a metalsmith begins the process with one of the many 98 Mauser models or a pre-'64 Model 70 Winchester action. In most cases, the

'smith removes and discards (or sells on eBay) the trigger and bottom metal (magazine box, floorplate, follower, and magazine spring). In the case of the Mauser 98, the 'smith will almost always replace the safety with a Model 70 side-swing variety, several of which are readily available on the market. The new safety can be either a two-position or three-position model. On a Mauser, he will also both cut off and replace the bolt handle, or completely reshape the existing one.



Photo courtesy Dave Norin

Though there is still a fair amount of work remaining on this action and barrel, it is well on its way to becoming another fine Dave Norin metalsmithing job.



Photo courtesy Dave Norin

***This pre-'64 Model 70 barreled action has been completely metalsmithed and finished by Dave Norin.
Please note that Dave has set up this barreled action to be pillar bedded in its stock.***



Photo courtesy Dave Norin

A very fine metalsmithing job performed on this 98 Mauser action by Dave Norin. It has also had a new trigger and custom bottom metal installed. About the only thing it's missing, if it belonged to me, is a three-position Model 70-type safety.



Photos courtesy Matthew Peake

Two views of a magnificent Frasier falling block single-shot action from the shop of Glenn Fewless. The work on this action is marvelous.



Photo courtesy Kevin Dilley

The late Tom Burgess was a wizard of a metalsmith. Few, if any, could equal his talents and none could surpass him. Shown here is a conversion that made him an icon among metalworkers. This is one of the famous 1917 Enfield conversions to a beautiful .416 Rigby, a feat truly akin to changing the ugly duckling into a swan. This rifle was stocked by another master of his craft, D’Arcy Echols.



Photo courtesy Lee Helgeland

Leave it to Lee Helgeland to do something different. Lee decided the “normal” shaping of quarter-ribs was not what he wanted on his personal rifle. I’ve never seen another shaped like this one, his 9.3×64 elk gun.



Photo courtesy Mustafa Bilal/Turk's Head Productions

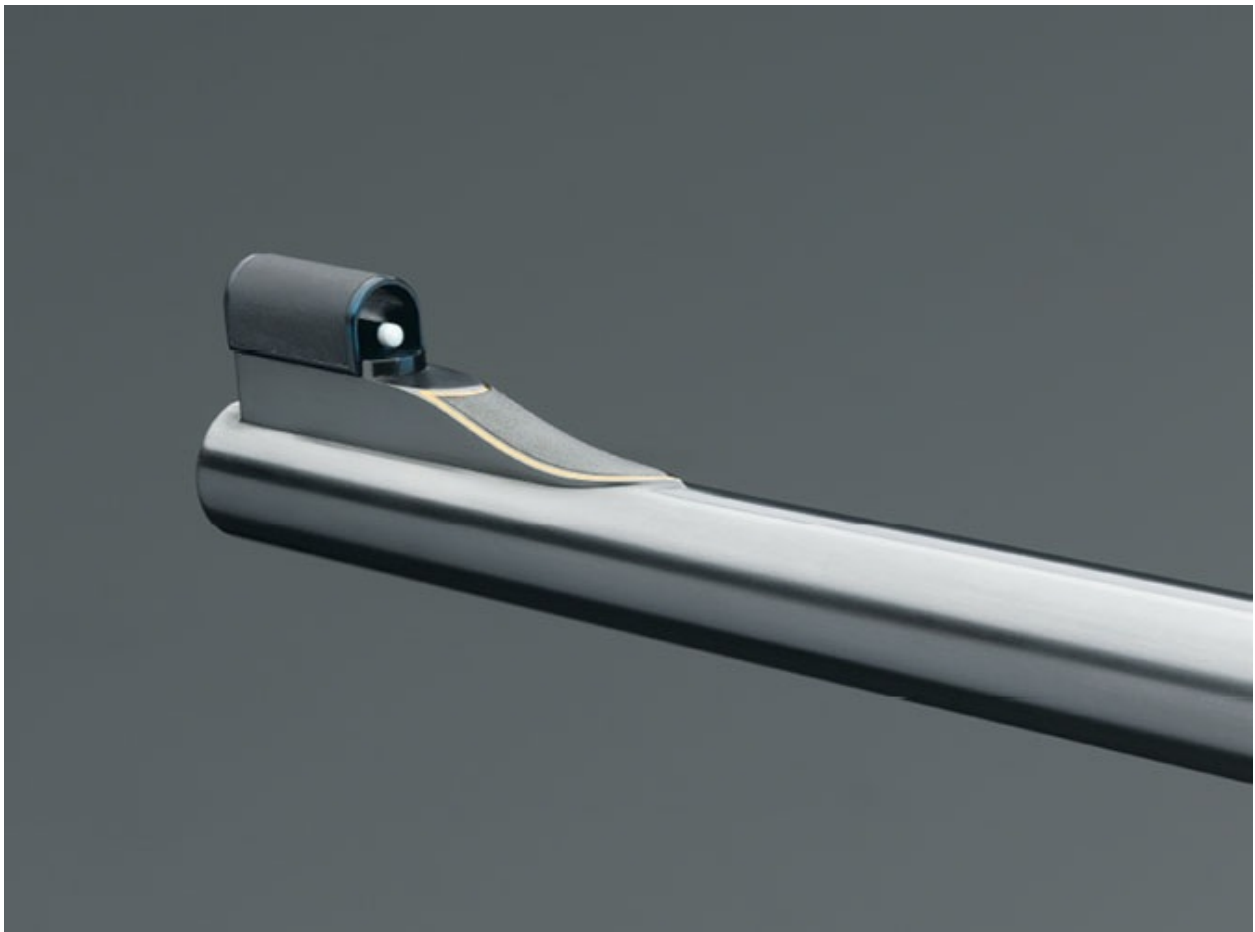


Photo courtesy Mustafa Bilal/Turk's Head Productions

Steve Heilmann wanted integral barrel furniture on this Mauser .500 Jeffery he built on spec. He started with a two-inch diameter barrel blank, removed everything that didn't look like a barrel, and formed the integral sights and sling swivel eyelet. It worked out nicely, to say the least.

In some shops, the 'smith will test each action for hardness and send them out to a specialist for a new heat treatment as required. Often, Mauser 98 actions are too soft to suit many makers. By contrast, the pre-'64 Model 70 is sometimes too hard. In both cases, the solution is a new tempering process, performed by experts specializing in the process and using highly sophisticated equipment.

I once wrote a magazine article in which I mentioned that custom makers sometimes re-temper actions. One reader, a former employee of a U.S. gun manufacturer, took me to task. His thesis was that only the manufacturer of an action should attempt to re-temper an action. Of course, that is good advice when practical and possible, and I told him so in my response. However, I also told him that I seriously doubted Mauser would accept a century-old WWI or 75-year-old WWII military action back at its plant for that purpose. In fact, most of the 98 Mauser manufacturers have long since ceased to exist, and the present day Mauser Company is mostly Mauser in name only. Further, I expressed serious doubts that United States Repeating Arms Corporation (USRAC, now defunct) or Browning Arms Corporation, the successors to Winchester firearms manufacturing, would take in a pre-'64 model 70 action for re-tempering. I also explained to the gentleman that the process I described did not rely on a can of oil and a blowtorch! The companies that perform these services are equipped with highly controllable equipment that costs megabucks and they employ professional metallurgists. Most of them are as well, if not better, equipped for the task than the original manufacturers.

Anyway, once the maker is satisfied with the temper of the action, he will usually replace the trigger with a preferred commercially manufactured unit. He will almost always do this on a formerly military Mauser. However, the pre-'64 Model 70 trigger is so good, it is often retained; a bit of honing and adjusting is normally all that's required. (I've never replaced the factory trigger on any of my

Model 70 actions, though they've all received specialized care, in the form of honing and adjusting.) The maker will then usually turn to Dakota Arms, Sunny Hill, Swift Bullet Company (which took over Ted Blackburn's operation), or Duane Wiebe, as a source for replacement bottom metal. A few 'smiths make their own bottom metal, but most find the process too time consuming to be profitable. The same is true of bolt handles. As I stated previously, a Mauser military bolt handle is always replaced or at least extensively reshaped. As issued, the Mauser bolt cannot be used with a scope, and few rifles these days are sans scope. The solution is to lop off the original bolt handle and weld on a replacement. Here again, most 'smiths buy their replacement bolt handles from Jim Wisner, Brownells, Midway, Duane Wiebe, or other suppliers, though a few will make their own.



Photo courtesy Reto Buehler

Reto Buehler has begun machining a barrel band rear sight base for one of his African rifles. Quite a bit of machine time is required to do one of the bases.

The trigger receives much attention and ensures a smooth, clean break without creep. Knowing where and how much to hone will normally take care of that task. The action is also a recipient of the honing process. The bolt and action

recesses are honed until the bolt will practically fall open by itself. Often, makers machine a new caliber-specific follower for the rifle, and they always devote considerable attention to feeding. They will feed dummy cartridges through the magazine into the action time and time again, modifying, honing, and polishing here and there, until it feeds like the proverbial hot knife through butter. Curt Crum, of the David Miller Co., worked over the feeding on a custom Model 70 .458 Lott of mine that another maker had built a few years earlier. When I got it back, it was so slick and smooth I had to take it back to him to roughen it up a bit! As my dangerous game rifle, I wanted to be able to feel when a cartridge fed from the magazine into the chamber, and Curt's work was so good I simply could not do that!



Photo courtesy Reto Buehler

Most of the metalwork on this Mauser action has been completed. Only a bit of final polishing remains to be done. Typical of Reto Buehler's work, this is about as clean as it gets.



Photo courtesy Steve Heilmann

This is a latching system for a made from scratch, quick takedown system for a Mauser 98 from the Steve Heilmann shop.



Photo courtesy Steve Heilmann

This is what a top strap extended over the comb nose looks like when fabricated by Steve Heilmann.

Some of our really talented metalsmiths will either shorten or lengthen an action to suit a particular need. Original magnum-length Mauser actions are scarce and, when one can be found, expensive. The petite original Mauser *kurz* (short) actions are even rarer. If a maker needs an action of rare length for a project, the least expensive solution, although still not inexpensive by a long shot, is to either make or have one made.



Photo courtesy Steve Helsley

American double rifle maker Butch Searcy decided to replicate a rising bite third fastener on one of his doubles and offer it as an extra cost option on his rifles. The original London firm of John Rigby discontinued the rising bite fastener, in 1920, due to the difficulty in making it and the excessive cost associated with its production. One London startup company using the John Rigby name vowed to build a rising bite double rifle, but never finished it, to my knowledge. Searcy did. Here it is showcased between a pair of original Rigby double shotguns,



Photo courtesy Steve Helsley

The Searcy rising bite double rifle. It is, to my knowledge, the only one made since John Rigby discontinued this third fastener system, in 1920.

Skilled artisans start with a couple inexpensive military Mauser 98 actions. Very basically described, they cut a piece from one action and weld it onto the second, thereby lengthening one action and shortening the other. Of course, it is far more difficult to accomplish either process than it is for me to describe them! One maker told me he uses three standard actions to end up with one short and one long finished action (the third action serves as a spare parts source for the process). Steve Heilmann, on the other hand, uses but two actions and ends up with two. I have seen numerous actions that have been so modified and, if properly and precisely done, it is undetectable short of X-ray investigation.

Mauser built a few original sporting rifles with raised and flattened metal platforms on the rear or front action bridges, sometimes both. I presume it did

platforms on the rear or front action bridges, sometimes both. I presume it did this to facilitate scope mounting on the actions. Original square bridge Mausers, as they are called, are rare and very desirable to collectors. Making a single or double square bridge action is no problem for a skilled metalsmith. He merely welds on additional metal to the action bridges and shapes it to the desired contours.

The 'smith will devote substantial metalwork to the barrel. Sometimes the artisan will machine the barrel to an octagonal shape, rather than round, and every now and then a maker will combine both round and octagonal shapes in the same barrel. If the quarter-rib, front sight ramp, sling swivel stud, and, if necessary, an added recoil shoulder are not integral (and they rarely are), then the maker will machine them separately from bar stock and solder them to the barrel. Making these items separately and soldering them to the barrel is obviously not as strong as crafting them integrally, but, unless the sportsman intends to use his rifle as a club with which to beat a buffalo to death, it is strong enough for about anything else.

What might be a coming trend is the fabrication of the quarter-rib and other parts out of a different material, or using a different finishing process on them. One job I saw from maker Bruce Russell had the quarter-rib, front sight ramp, and scope mount bases made of Damascus steel. I thought it looked very spiffy, though there is no functional advantage for doing so. I've also seen an example or two of rifles with the barrel rust blued and the rib, ramp, and scope mounts color case hardened.



Photo courtesy Tom Alexander

Here is a fine example of superb metalwork. This rifle is from the shop of Reto Buehler. About all it lacks before turning it over to the client is the final finishing. It's going to be one heck of a rifle. It was built on a ZG-47 Mauser action and fitted with a Blackburn drop box magazine set and a Pac Nor barrel. Reto Buehler did all the wood and metalwork.

Today's Metalsmiths

Quite a few of our most talented metalsmiths are young in years, compared to their peers. Heck, I have socks older than Mark Cromwell, Reto Buehler, James Anderson, and Shane Thompson, to mention but a few. One of the best I've seen, Steve Heilmann, is still a relatively young man. The quality of the work these men turn out, though, is mind numbing, it is so good. It is scary to think how phenomenal these guys might become when they accumulate some years.

We lost a couple of the really great metalsmiths this past year or so, in Herman Waldron and Tom Burgess. Bob Snapp and Ted Blackburn are both well grayed behind both ears, but last I heard, Bob was still doing some work. Ted, I've been told, has retired. As an octogenarian, he has earned his rest, but knowing Ted, I'll bet there is still a mill in his shop!

The team of David Miller and Curt Crum — The David Miller Company — complement each other perfectly. Makers of some of the finest custom rifles in the universe, Miller does mostly metalwork these days, while Crum does both metalwork and stocks. They can also produce accessories, exhibition-quality oak and leather trunk cases, and about anything else known to man. They don't make their own actions, but they certainly could. The action they use in their rifles today, the current Winchester Model 70 Classic, was, in large measure, developed in the Miller shop. How it came about is an interesting story.

In the early 1980s, Miller, Crum, and Safari Club International (SCI) came up with the idea of producing five custom rifles, one per year, each dedicated to one of the Big Five game animals of Africa. At least that's the story told. I suspect that, if the whole truth were to be known, Miller and Crum came up with the idea and SCI bought into it. At any rate, the "Elephant Rifle," built by Miller and Crum, was the first. The Champlin "Rhino Rifle," Heym's "Buffalo Rifle," Paul Jaeger's "Lion Rifle" and, finally, the "Leopard Rifle," again from the Miller shop, followed, in that order. The centerpiece of the grand finale night of a series of the annual SCI convention was the auctioning to the highest bidder of that year's rifle.

For the fifth and final rifle in the series, Miller and Crum wanted to come up with something extraordinary. In coordination and cooperation with USRAC, then the manufacturer of the Winchester Model 70, the Miller shop developed a new Model 70 action that combined the best features of the pre-'64 action with those of the post-'64 version. USRAC then produced a tool room prototype and sent it to Tucson. I was present in the Miller shop, along with Miller, Crum, C.J. McElroy (CEO of SCI), and Holt Bodinson (Administrative Director of SCI),

when Miller opened the package.

It was nowhere near a finished action. The parts had been roughly machined, but Winchester technicians had done no fitting to the action parts. Neither, as memory serves me now, had the action been heat-treated. The Miller shop did all the fitting, honing, and polishing on the action, then returned it to USRAC for heat treatment. The Miller Company then used this unique action to craft the “Leopard Rifle,” which sold at auction for the whopping sum of \$201,000. That was a record at the time for a modern bolt-action rifle, and it may still be. (The “Grizzly Rifle,” magnificently crafted rifle by John Bolliger and Rick Stickley, sold for more money at auction — \$225,000 — than did the “Leopard Rifle,” but its price included an original 400-ounce silver sculpture by Dennis Jones and a glorious walnut credenza expertly custom constructed by Tom Julian.)



Photo courtesy Reto Buehler



Photo courtesy Reto Buehler

Making barrel band front sight ramps from scratch requires a good bit of skilled machining work. These are the work of Reto Buehler.



Photo courtesy Reto Buehler

This double square bridge Mauser action and Pack Nor barrel blank are coming along nicely. A fair amount of work remains though, before Reto Buehler will be mating the metalwork with the stock blank shown.

With the computer-controlled machinery available today, it is perhaps a bit easier to do quality metalwork than ever before, but — and this is a huge “but” — how many custom shops can afford such a piece of technology? Very few, if any, I suspect. In addition, such equipment is really only practical if a series of like pieces are being produced. A factory that produces one piece after the other, all precisely alike or nearly so, can and must make use of such expensive machinery. An individual maker who almost never produces the identical product twice gains practically no advantage in doing so.

Almost every shop has a lathe and a mill, but much of the work is done with files, scrapers, and stones. That technology has been around since well before

files, scrapers, and stones. That technology has been around since well before the Industrial Revolution. Even so, these tools do their jobs and do them well, provided the user has the necessary skills. I am reminded that the testing standard that enabled a German apprentice gunsmith to graduate to the journeyman level used to be to convert a block of steel into an action, using nothing but files.

As an aside, even well-equipped shops with newly manufactured and expensive machinery installed still have mountains to climb. No manufacturer makes a gunsmith lathe or gunsmith mill; they make machines to work with steel, but they are not specific to a trade. As an example, the David Miller Co. shop has replaced both its machine lathes and one of its milling machines with brand new models over the past couple of years, not an insignificant investment. Even so, and even though all three machines are brand new, Dave and Curt completely rebuilt and modified all three before the first piece of steel went into the chucks. I would guess the investment in time and parts that went into rebuilding and modifying the machines equaled or (more likely) exceeded the initial cost of the equipment.

One component of custom metalwork is becoming so specialized that it has almost developed into a separate discipline. This component is metal finishing. Not long ago, we had bluing and not a lot else. Most 'smiths used the hot blue process on highly polished metal. The result was a high-gloss blue job acceptable to most clients. In the past few years, though, high-gloss has largely become passé, in favor of a soft matte blue. The hot blue process is still widely used, but the old-fashioned slow rust blue process has been resurrected.

These days, we have hot blue, rust blue, niter blue, charcoal blue, differential blue, and carbona blue. Another ancient form of metal finishing that has been rescued from oblivion is color case hardening. Years ago, this process was necessary, because the available steels of the period were not nearly as advanced as those in use today. The color case hardening process surface hardened the steel to an acceptable level and added beautiful coloring to the material at the same time. Two for the price of one! Color case hardening is no longer

same time. Two for the price of one. Color case hardening is no longer necessary to strengthen steel, but it has been rescued from the scrap heap for the beautiful coloring it provides.

There can be no question that we are seeing much better metalwork in custom guns today than at any point in our past. Advances in technology can account for some of the improvements, but by no means all. I suspect the primary reason is simply that makers have developed a customer base willing and able to pay for their added efforts. Precise metalwork is labor intensive and time consuming. By and large, the work is less noticeable to the average potential buyer and, until relatively recently, these customers were unwilling to pay for it. Thanks to projects such as those of Safari Club International, the American Custom Gunmakers Guild, the Firearms Engravers Guild of America, and other similar organizations, this has changed.

Projects such as the SCI-sponsored events gave the participating craftsmen a free hand, one mostly unrestricted by cost considerations. As such, they were free to show what they were capable of, rather than only what they could sell to put beans on the table. The arrangement had the added benefit of providing a continuing education experience for both makers and potential customer alike. Makers could see what their competitors were turning out and could react to it as a challenge. Potential clients, by seeing more and more higher quality work, raised the bar for what they were willing to accept and the amount in their checkbook they were willing to pay to get it.



Photo courtesy Reto Buehler

Though Reto Buehler has built his sterling reputation mostly on his work with African-style heavy caliber hunting rifles, he is capable of much more than that. The custom metalwork on this Winchester Model 92 gives a hint as to his versatility.

5

Actions

This scribe is a great fan of the pre-'64 Winchester Model 70 action for my own custom rifles. I could give all sorts of functional and aesthetic reasons for this preference, such as sleek looks, controlled round feeding, side-swing three-position safety, smooth functioning (sometimes with a little help), *etc.* To be completely honest, though, the real reason I favor this great action over Mausers, Remingtons, Enfields, or any number of other perfectly acceptable actions, can be blamed on one man: Jack O'Connor.

As a kid growing up, I had never heard of Ernest Hemingway or Robert Ruark. I did read many other great classic authors such as Shakespeare, Longfellow, and Dante, not because I particularly enjoyed their work, but because my English and literature teachers required it of me. The great writers I read for enjoyment and to learn a thing or two from were Pete Brown of *Sports Afield*, Warren Page of *Field & Stream*, and I think the best of all, Jack O'Connor of *Outdoor Life*. If I didn't have enough money to pick up all three magazines at the local drugstore, I bought *Outdoor Life* first, always, followed by whatever else my meager allowance would allow. The reason for this order was that O'Connor wrote exclusively for *Outdoor Life*.

O'Connor influenced me in many ways, some immediately, others not until later. One of his earliest impressions on me was his choice of rifle styling (purely classic), and his selection of the Model 70 Winchester action (pre-'64, of course), to send off to Al Biesen to be made into a fine custom rifle. How I longed in those days to have Biesen build me a rifle identical to one of O'Connor's. I still have that longing, although I have not, to date, been able to

satisfy the desire. Al Biesen is now well into his nineties and will never build another rifle. Still, while I can never fully realize my long-running dream, I could get awfully close, by having Al's son, Roger, build me one. There's little if any difference between the work of father and son, but, since I'm only a couple years shy of O'Connor's age when he passed, it'll probably never happen.

The pre-'64 Model 70 Winchester is a wonderful action. Engineered with many features of the Mauser 98, a Model 70 also contains refinements that had to be added to Peter Paul's great development to improve it. At least three significant changes are routinely made to a Mauser action, when using one as the basis for a fine custom rifle. First is to change the safety. The Mauser original is a very positive safety that blocks the firing pin. Unfortunately, it is also pretty cumbersome to use, particularly when the rifle has a scope. Custom 'smiths regularly replace the factory original with a copy of the Model 70 safety. Second, the 'smith will either replace or substantially modify the original Mauser two-stage military trigger, to eliminate the first-stage pull and give it a crisp, creep-free, and relatively light trigger pull. Finally, he either replaces or reshapes the bolt handle to permit the low mounting of a scope.

Some Mauser actions, particularly the late production military ones, tend to be a bit soft. According to Ludwig Olson, in his great book *Mauser Bolt Rifles*, Mauser actions were produced from carbon steel, with a relatively soft inner core and hardened outer surface. Olson also reported that various parts of the action were heat-treated differently, according to the stress and wear to which a given part would be subjected. Apparently, in the turmoil of the last war years, heat treatment, among other things, was not always well done. With the high-pressure cartridges often chambered today, it would be wise for makers to always check the hardness of the action used, particularly if it is a late WWII production military model.



On the yellow background is a Winchester Model 70 Classic action made by USRAC, which had an agreement with the David Miller Co. and sold him a few actions before they were heat-treated. USRAC no longer exists, and Browning is now managing the production of the current Model 70. Last time I spoke with Dave Miller on the subject, he did not have the same agreement with Browning/Winchester.



On the blue and green backgrounds are two views of a donor pre-'64 Model 70 Winchester donor action for a custom project the author had in mind. He found a suitable rifle at a local gun show and bought it just to get the action, one of his favorites to work with. The photo with the blue background shows the action with a set of Blackburn custom bottom metal for it. The bottom metal has not yet been fitted to the action.

The Mauser Model 98-type action is, without question, the most popular action in the world and has been for many, many years. Very few bolt-actions have been manufactured since the introduction of the Model 98 that do not liberally borrow from the Mauser design. Some, perhaps most, are pretty much direct copies, while others are modified in one way or another. Indeed, most

actions on the market are principally Mauser in function, including the Model 70. Some of the finest custom rifles ever built have been put together using Mauser actions, and that practice continues today.

One feature of the Mauser action that has received much hoopla is called “controlled round feeding.” It is a very desirable feature. In this design, what happens is that the round that pushes up from the magazine is fed under the extractor of the bolt. The long extractor firmly holds the round and directs it, under control of the bolt, into the chamber. In other words, the cartridge remains under the positive control of the bolt from the time it leaves the magazine until it is firmly ejected from the chamber. The modern series of actions, in comparison, at least most of them, strip the round from the magazine in the same manner, but leave it loose in the action. In this manner, the round is only pushed along by the bolt as it travels; it is under no control from the bolt other than momentum. For obvious reasons, the controlled round feed design is much preferred.

I know of but one disadvantage to it, other than perhaps cost, and that is in a situation where a hunter is in the middle of a contest with a dangerous animal. If the hunter uses all the ammo in the magazine and the animal is still active (meaning licking at his shoelaces), he would likely drop a cartridge into the chamber and quickly close the bolt. In the original, unmodified 98 Mauser, this would be a problem. On such a rifle, it is difficult, if not practically impossible, to close the bolt on a round fed directly into the chamber and not up from the magazine. To chamber a round without feeding it through the magazine, it is necessary to manually snap the large ejector over the cartridge head. This can be done, with difficulty, with some controlled round feed actions. With an original Mauser, though, it is damned near impossible. Fortunately, a good Mauser ’smith knows how to modify the extractor to permit emergency loading directly into the chamber, as well as continue the preferred loading from the magazine.

One measure of the 98-type action’s popularity is the number of different manufacturers that have produced a more or less direct copy of it. I won’t belabor the reader with an exhaustive listing, but such actions have been

produced in France, Belgium, Spain, Yugoslavia, a few South American countries, Korea, and the USA, to name a few. I would guess that Fabrique Nationale, in Belgium, and Brevox, in France, turned out the most popular versions of the 98 actions, other than the original, whether built by the Mauser Werke, in Oberndorf, or other German manufacturers.



Here is the finished rifle. It is now a lovely and very accurate all-around hunting rifle chambered for the old standby .30-06 cartridge.



Shown above are the makings for one heck of a custom rifle, a pre-'64 Model 70 action and a nice stick of European walnut. A lot of time and considerable amount of money will be necessary to finish the rifle.



Here are the components for a nice custom rifle using the USRAC-made Model 70 Classic action. Also shown are a New Zealand walnut stock machine-shaped and -inletted to the David Miller Co. Featherweight pattern, a set of Blackburn bottom metal, and a Danny Pedersen custom barrel.





A before and after photo of the reshaping of the rear tang on a pre-'64 Winchester Model 70 action to a much more pleasing shape.

About 20 years ago, there was a surprising resurrection of the .416 Rigby round, along with several other .416-caliber ballistic clones. Remington came out with one, as did Weatherby. Ruger decided to stay with the old tried and true Rigby version, and so did Kimber and Heym. Dakota chambered rifles for both the original Rigby and the Remington incarnation, as well as developing one of its own designs, the .416 Dakota. These were added to a couple .416-caliber wildcats that had been kicking around for quite a long time. The .416 Taylor, based upon a necked-down .458 Winchester case, and the .416 Hoffman, based upon a blown-out .375 H&H case, both essentially duplicated the original Rigby ballistics (a 400-grain bullet around 2,400 fps), but at considerably higher pressures. The Remington version is almost identical to George Hoffman's baby — why Big Green didn't just offer it instead of developing its own version is a mystery to me. Weatherby, typical of his philosophy, simply wasn't satisfied with duplicating Rigby ballistics; his version was souped up to sizzling 2,700 fps.

Anyway, the purpose in this .416 dissertation is that, while the Remington,

Taylor, and Hoffman varieties could be chambered in a .375 H&H-length action, the Rigby and Weatherby versions could not, at least not without extensive modifications to the actions. They required a true magnum-length action and bolt head diameter. When Brevex stopped production of its magnum-length action, there were few others available large enough to handle these cartridges. The Weatherby Mark V would, but other than lucking into an original magnum Mauser, either of Oberndorf or Brevex varieties, precious few alternatives remained. The .416 mania cured that problem.

Ruger developed its version of a magnum-sized action and wrapped a .416 Rigby chambered rifle around it. Dumoulin, from Belgium, had a massive action for a .416 Rigby-sized cartridge, while Heym, of Germany, developed its own action — and, typical of the Germans, did everyone one better. It even chambered the new Heym Express for the .600 NE! Don Allen of Dakota produced his Dakota 76 action in the appropriate size, as did Kimber. Of this group, the Ruger was the least expensive, although I don't know if Ruger would sell just an action. I doubt it. Price-wise, the Dakota 76 was next. The Dumoulin and Heym actions were wonderful, but quite expensive.

Not to worry. Along came the BBK 02 action. Investment cast and imported from Korea, this action was on the market for around \$500, and many .416 Rigby's were built on it. The earliest examples of the action were pretty rough, but later examples I saw were pretty good. Even the rough examples were perfectly satisfactory, after a bit of polishing and honing. Alas, after a few years, the BBK 02 went out of production and fell by the wayside. Kimber of Oregon also went out of business, in 1991, taking the Model 89 chambered for the .416 Rigby with it. Kimber as a company has been resurrected and is going strong today, but, to my knowledge, it has not made another .416 Rigby since the original company closed.

Fortunately, the rest of them survived and, as far as I can tell, are doing well. Several 'smiths I know bought Brno ZKK-602 rifles, when they could find one. This Czech-made rifle featured a Mauser-type magnum-length action, and while

rather roughly made as it came from the factory, the basics were all there. By making a few modifications to the action, replacing the trigger and bottom metal, and adding a few hours honing and polishing, the resulting action was excellent.

Finding a source for a .416-length action these days is a non-issue. Loads of them are being produced and are, more or less, readily available. The CZ-550 Safari Magnum replaced the old Brno ZKK-602, and the replacement is far better in fit and finish than the original. It still isn't ideal, and some refinements are desirable, but a fine .416 Rigby can be built around it.



This Model 70 action has been partially surface ground. More grinding remains to be done to complete the job.



The beginnings of another fine custom rifle, a 1909 Argentine 98 Mauser action with factory firing pin and striker, firing pin spring, and long extractor, along with a set of Blackburn custom bottom metal and both a Recknagel trigger and three-position safety.

Stepping up a notch or two, there are several Mauser Model 98 clones available these days. Granite Mountain Arms, in Arizona, makes one in a variety of lengths. Stuart Satterlee makes a fine one, as well. So does Gottfried Prechtl, in Germany; Herr Prechtl makes both a variety of actions and completed rifles. Heym has vastly improved its big magnum action and built a new rifle around it. Rube Wells, son of modern Mauser icon Fred Wells, has a magnum Mauser action available to the trade. Last I heard, Peter Pi, of CorBon Ammunition, was bringing out an action large enough for the .416 Rigby. Largely designed by custom maker D'Arcy Echols, it should be a jewel. I've not yet seen one firsthand, but the photos I've seen look great. It resembles a Winchester Model 70 in appearance, more than a Mauser.



A couple main components for a very fine Mauser custom rifle, a 1909 Argentine action and a stick of lovely California English walnut. Before sending the components to Gary Goudy to stock, I first sent the action to Danny Pedersen for making, fitting, and chambering one of his cut-rifled barrels, and to Roger Ferrell to do the metalwork fit and finish.

As I'm sure most readers are aware, Mauser manufactured the original Model 98 action in several different lengths. I'm not a Mauser collector and am not really up on all the different varieties, but I do know there were short actions, intermediate-length actions, standard-length actions, and magnum-length actions. There may have been, and probably were, variations on these action lengths. Apparently, the rarest variety was the kurz, or short action. I know that, in a lifetime of nosing around gun shops and gun shows, I have seen very few of them and, of those I have seen, some may not have been original. Original magnum-length actions are also scarce and expensive. Modern-made versions of these old Mauser actions are little, if any, more economical.

The vast majority of actions commonly used today use front-locking bolts. By that I mean the locking lugs on the bolt are at the front, just behind the chamber, when engaged. The number of lugs varies depending on the action. Some have two massive locking lugs; Mauser added another lug on the bolt itself. The bolt handle also acts like a locking lug. Other actions have as many as

nine much smaller lugs. Mauser is the best example of the former, the Weatherby Mark V the latter.

Back in the 1950s, or at least it was about that time when I became aware of it, the Danish firm Schultz & Larsen marketed a rifle in the U.S. This rifle used a different concept. The locking lugs on the bolt of this Scandinavian import were toward the rear of the bolt shaft. There may have been other rear-locking design actions around, but, as memory serves me now, the Dane product was the first such action I came across. Since then, several other rear-locking actions have come onto the market, but I don't believe any were all that successful. Most I'm aware of were European models, though Japan produced a couple, as well. Remington had a rear-locking model for a while, the Model 788.



This is a close-up of a 1909 Argentine Mauser Model 98 as produced by DWM, in Berlin. It is a desirable action to use for crafting a custom job.



This is the completed rifle using the components shown here and in the bottom photo of the previous page. It is a very handsome and accurate rifle.



Photo courtesy D'Arcy Echols

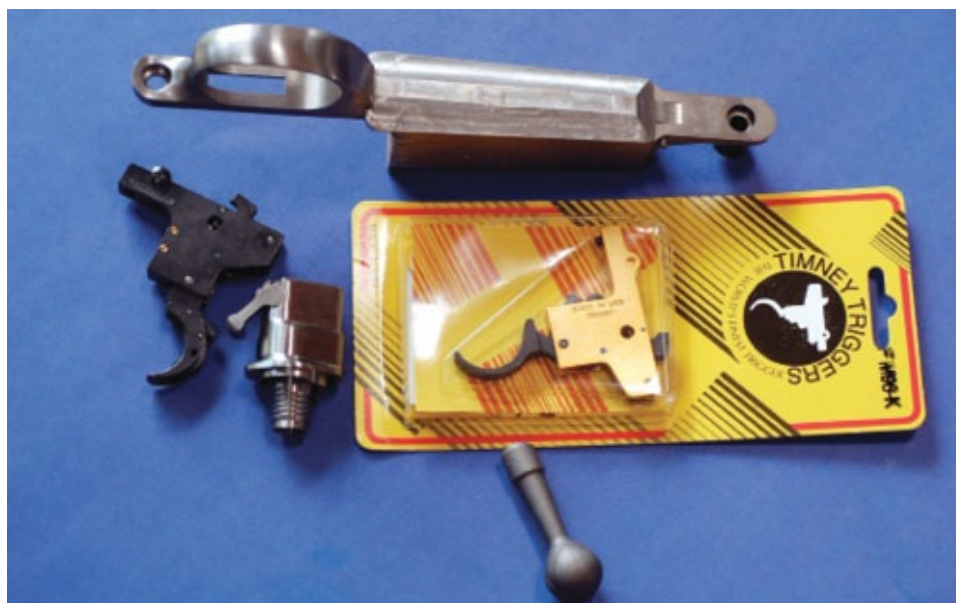
A right and left view of a brand new action that is not yet on the market. The action was designed by

Peter Pi of CorBon and custom gun maker D'Arcy Echols, incorporating the best features of both the Mauser 98 and the pre-'64 Model 70. This action is a large magnum size intended for the .416 Rigby and similarly sized cartridges.



Photos courtesy D'Arcy Echols

There is a continuing demand, not all that large but steady, for aftermarket parts for the 98 Mauser and a few other actions. There are several sources for these parts. Shown here are some produced for use in the D'Arcy Echols shop.



Shown here are a couple triggers, a new bolt handle, and a set of custom bottom metal. The Timney trigger and new bolt handle are from Brownells. The Recknagel trigger came from New England Custom Gun, and the bottom metal from Ted Blackburn. Ted Blackburn is now retired, and his operation was

purchased by Swift Bullet Company, thus, Blackburn bottom metal and 98 Mauser triggers are available from that company.

Rear-locking bolt-actions can be made velvety smooth in their function and to have very short bolt throws. Both these attributes are desirable. Unfortunately, for a reloader at least, they have one perceived disqualifying factor. I say perceived, because I have never used a rear-locking bolt-action rifle enough to experience the problem. Apparently, since the bolt head is not physically supported, the pressure generated by the cartridge firing springs the bolt head slightly to the rear. The flexing is very, very slight, but ostensibly sufficient to permit the brass cartridge case to stretch slightly. I suspect this fault, real or theorized, has a great deal to do with the lack of success of this type action. Whether it's a bum rap or not, I can't say, but rear-locking actions have not been very popular.

*

No discourse on rifle actions would be complete without mention of actions other than bolts. The purely American innovation, the lever-action, has lost much of its popularity in recent years. Typified by the iconic Winchester Model 94, the lever gun is still very practical and useful in some hunting situations. So are semi-auto and pump-action rifles still in production. Remington produces both types, and Browning has its semi-auto. The single-shot rifle, with the Ruger No. 1 being the best example, is still very popular today. I have four in my personal battery, and I use them frequently. Of the four, three are Ruger No. 1s, the other a Soroka Farquharson. Custom 'smiths do precious little custom work on any non-bolt-action rifles, except for the single-shot.

Which action is best? I'll cop out and say it's whichever you prefer. Answering that question otherwise would surely fill my mailbox. As I said in the beginning of this chapter, I personally prefer the pre-'64 Model 70 action as the basis for my rifles. Having said that, I currently have a couple custom jobs in the works, but neither project is using that action, rather both are being built around

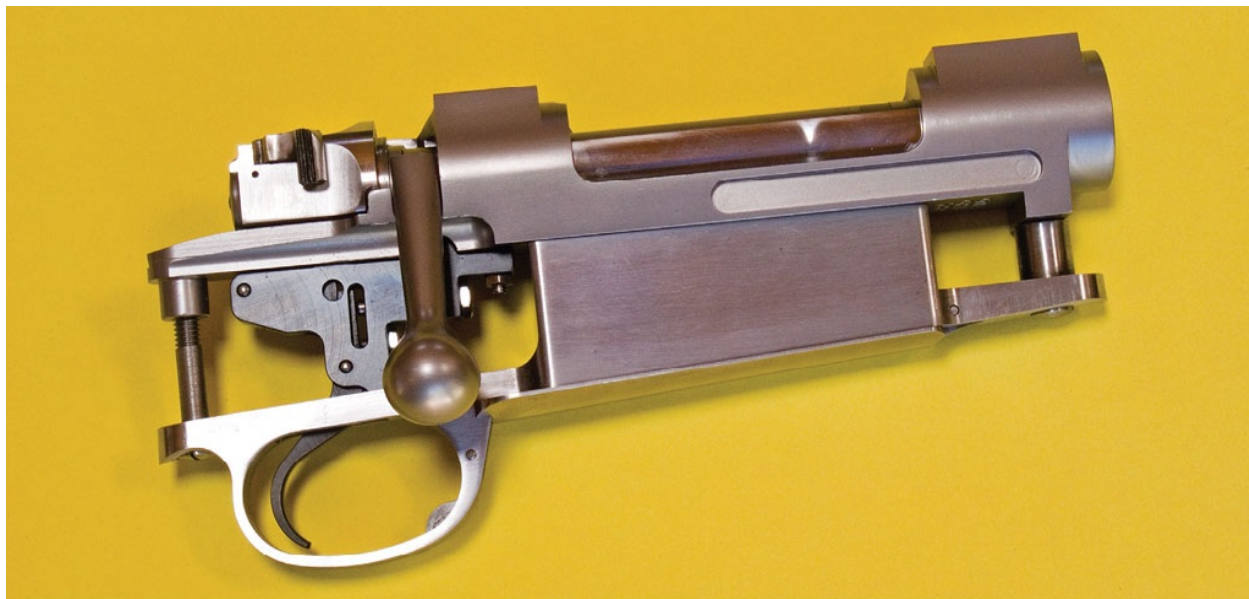
Model 98 Mauser actions. I had two fine pre-wars on hand and decided to use them, instead of trying to find and, more importantly, come up with the cash necessary to buy a couple Model 70s. I can't wait to see and use the finished products. I know they will work just fine.

Since USRAC came out with the current Super Grade Classic Model 70 action, there is little justification, other than nostalgia and stubbornness, to track down a pre-'64 model. The current production model now coming out of the Browning facilities, in South Carolina, is excellent and, in several ways, superior to the earlier Model 70 action. I wish I had a footlocker full of them.

Not many Springfield '03 actions are used anymore for custom rifles. A few diehards still insist on using them, but the numbers are decreasing rapidly. Many excellent rifles were once built around the action, and numerous fine makers cut their teeth converting Springfield actions into inexpensive sporting rifles, but modern custom jobs on this action are seldom seen today. Still, custom stock maker Gary Goudy relatively recently built a wonderful little rifle, using a Springfield '03 action. Goudy sent the action to Steve Heilmann and had it shortened by half an inch or so. He barreled and chambered the rifle for the 6mm PPC cartridge, then sent it to Sam Welch for a magnificent engraving job. Goudy stocked the rifle to the muzzle *à la* Mannlicher, with a super stick of walnut. Finally, Marvin Huey cased the rifle in one of his superb oak and leather trunk cases. When I asked Gary why he chose to use the Springfield action, he replied, "Just to be different."

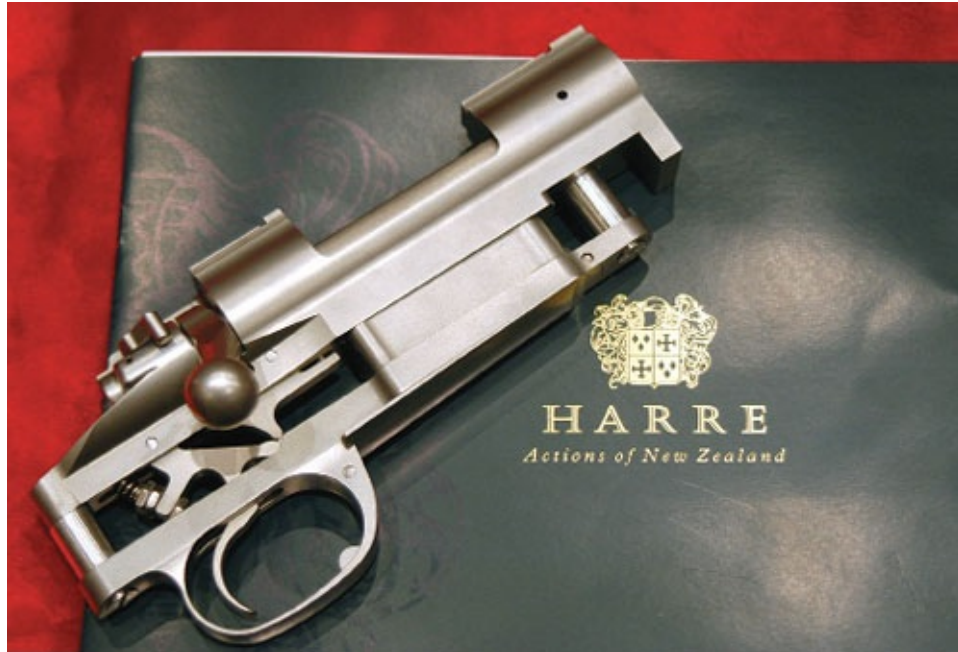


An original G33/40 small ring Mauser action that has had a bit of custom work started on it. It has been fitted with a set of Blackburn custom bottom metal and a new bolt handle, and the original safety has been converted to a two-position side-swing version. Lots of hours and dollars will be needed before it is ready for a custom stock.



This .30-06-length Granite Mountain Arms action is the GMA version of the G33/40 Mauser. Like the original, it is a small ring action.





Above top is the largest action produced by Granite Mountain Arms, one for the massive .505 Gibbs cartridge and a couple other behemoth rounds of similar size. To the bottom, New Zealander Brian Harre designed this action several years ago. It is very nicely made, with all the bells and whistles. About the time he was preparing to go into production with the action, he and his partners had a disagreement of some sort. Last I heard, it sounded like he was again preparing to go into production.

I once owned a custom rifle made by Texas maker Cecil Weems. Weems used a Shilen action for the rifle and chambered it for a really odd duck, the .270-08. The Shilen action was wonderful, and Weems' metal and stock work was excellent. I never used the rifle much, though, primarily because of the caliber. It just didn't make a lot of sense to me. I eventually traded the rifle for something, although I can't remember what.

The 1917 Enfield action was a popular choice for magnum cartridges, for a long time. The action had enough beef to it to permit opening it up to accommodate .375 H&H-length cartridges and longer. Many custom rifles chambered for the .416 Rigby used the action, and quite successfully so. On the downside, the action took a substantial amount of work to convert it to an aesthetically pleasing one, but even with all the work required, they were commonly seen. Custom maker Tom Burgess was an absolute master at converting 1917s into beautiful rifles. No lipstick on a pig when Burgess did the

work, that's for sure. One company, A-Square, used the action for its large-bore rifle production, though it is the only company that ever did, to my knowledge. As I write these lines, I just learned the A-Square has closed its doors once again, this time, it seems, for good.



Commencing one of the necessary steps in converting a factory action into one suitable for use on a custom job. The action surfaces are all trued using a surface grinder.



Photo courtesy -Ralf Martini

A right-side view of a “new” Mauser action coming out of Germany. This one is the FZH action that I am told is an excellent action. I have not yet seen one, but the photos look very fine. There are at least

three firms in Germany that I know of currently producing Mauser actions like the original, and these include Prechtel, Hartmann & Weiss, and, now, FZH.

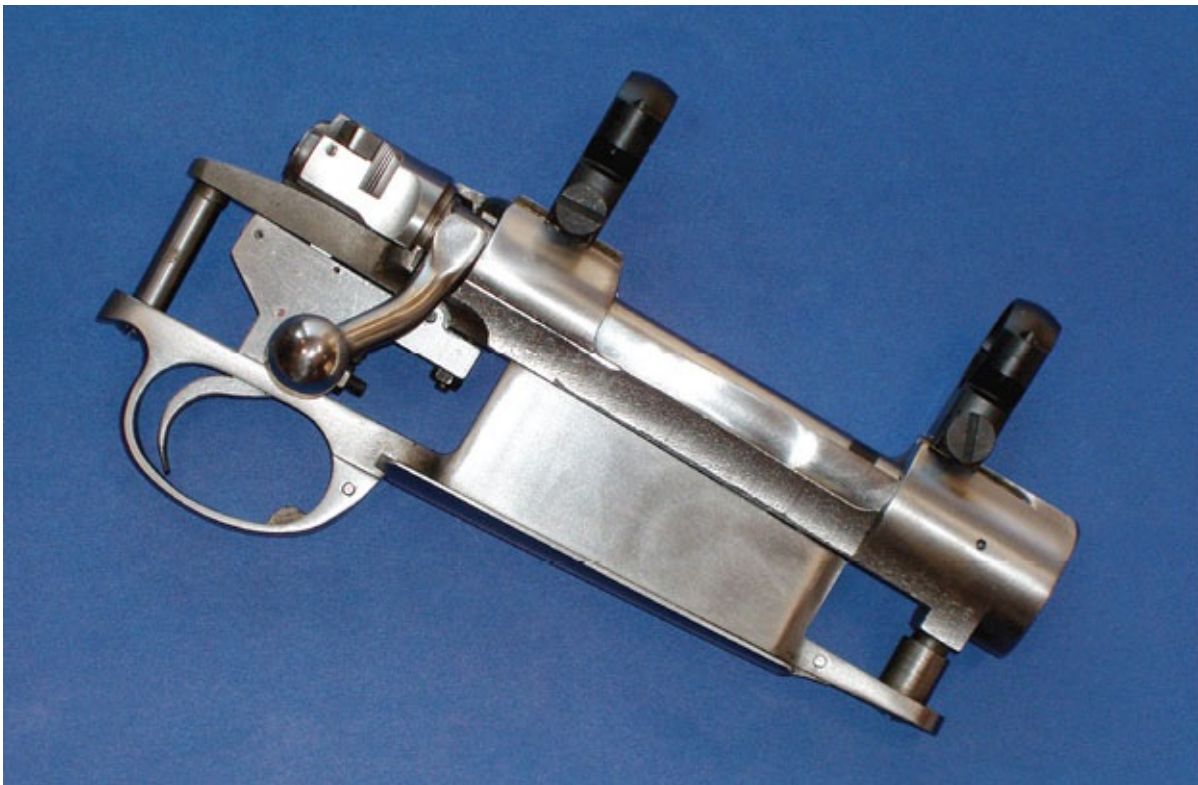
One of my biggest surprises concerning actions took place during a visit to the famed British rifle maker John Rigby. This was during the late 1970s, when the firm was still at the old Pall Mall Street address and not doing very well financially. A potential client came in and inquired about having a stalking rifle built. The young gun maker discussing the project with him was recommending a military Mannlicher action. I can't imagine a more inappropriate action for a fine British rifle. I would have been no more surprised had I been visiting a Rolls Royce showroom and overheard a salesman recommending a Volkswagen engine for its Silver Shadow.

A recent trend has seen the resurrection of the straight-pull action, primarily by the German firm Blaser. The R-93 and its successor, the R-8, have had some success in the North American market. This action is a radical departure from the traditional Mauser designs, one that permits a rapid change of barrels and bolt heads, so as to allow one basic rifle with any number of chamberings. The downsides for this old curmudgeon are that it is not the most attractive rifle in the world and it is quite expensive. I do not believe that Blaser will sell just an action; I have never seen a custom rifle built around one. The German firms of Merkel (RX-Helix) and Heym (SR-30) also make a straight-pull action, but sell very few in this country.

Of all the custom rifles being built today, as well as most of them built in the past, Winchester and Mauser actions dominate the field. I have seen a few custom jobs using Remington 700 actions, but not many. These days, a few Dakota 76 actions are showing up on custom rifles, but, cosmetically, the 76 is very similar to the Model 70.

I suspect the reasons for the predominance of Model 70 and Mauser actions are many. Availability is an issue, and Mausers are both common and usually inexpensive. Model 70s are also reasonably available, though at higher prices. Either can be turned into very attractive rifles. The Model 70 requires a lot less

work than does the Mauser. Many 'smiths use the Model 70 as is, with little added work, other than cleaning and polishing. The Mausers, on the other hand, all require a substantial amount of work to get them ready for use. Either way, most custom rifles sport one of these two action types, the major reasons being that they look good, are very strong, and work well. I suspect that we will continue to see these two action types dominate the custom rifle field in the years to come.



This moderately priced commercial Mauser 98 large ring, .30-06 length action, was imported into the U.S. a few years back. I understand the actions were investment-cast in Italy. The example I saw was a bit on the rough side, but had all the essentials. With the addition of a few hours of hand polishing and honing, it could have been made into a very good action. I haven't seen or heard of such another action in quite some time, and I assume they are no longer available.



Photo courtesy Lee Helgeland

Custom gun maker Lee Helgeland built this wonderful rifle using a surplus 1909 Argentine Mauser action and a heck of a lot of highly skilled work.





This series of photos gives the novice a small idea of what is involved in the production of the parts to make a Mauser action from scratch. These photos were taken in the Heym plant in Germany, during the production of their version of a magnum Mauser action.



Photos courtesy F.W. Heym

6

Barrels

There is a saying in golf that goes, “You drive for show and putt for dough.” For the non-golfer, that adage means that a long, straight drive off the tee and down the middle of the fairway, while impressive to watch and difficult to execute, doesn’t get the ball into the hole. Rather, it is largely the putter that accounts for low scoring. To play really well, of course, all facets of one’s game must be solid. The same principle can be applied to rifles.

We can equate a golfer’s driver to a rifle stock. That stock is the showy part of a custom rifle. It is the first thing any observer notices and is the one aspect of a custom rifle that practically everyone uses to arrive at a judgment on the quality of the piece. Naturally, it is important, but, just as the score in golf depends largely on the putter, the accuracy of a rifle depends mostly on the barrel. A good drive certainly contributes to the score, just as a properly bedded stock promotes accuracy. The best drive in the world, however, won’t get the golf ball into the hole, nor will the best stock in the world, by itself, result in one-hole groups.

As we shall see, there are many variables in a rifle barrel. In its most elementary form, a barrel is merely a billet of steel with a very straight hole drilled through it. The hole is then, by one of a number of methods, provided with rifling. Rifling is simply a series of grooves that spiral through the barrel at a prescribed rate of twist. This rate is generally related as 1:10, 1:12, *etc.* This means, in the case of 1:10, that the rifling makes one complete turn every 10 inches. For 1:12, the turn takes 12 inches, and so on.

Once the hole is drilled and the rifling added, all that remains to finish the

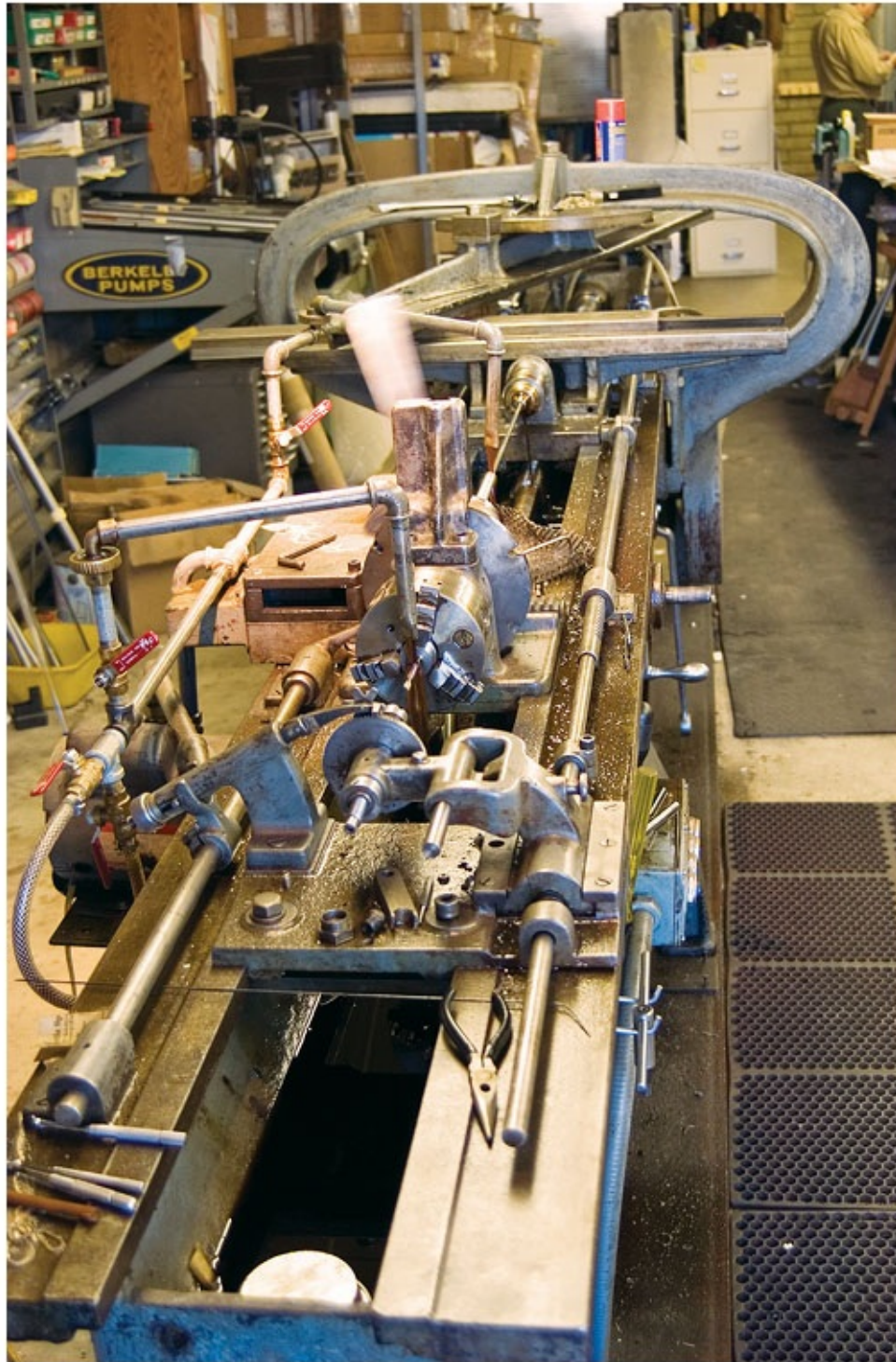
barrel is to contour the outside surface of the steel, cut threads on one end, and ream the chamber for a given caliber. The completed barrel can then be screwed into an action, properly headspaced, and taken to the range. Naturally, this description is a very simplified rendition of what actually takes place.

Fundamentally, though, the characterization is accurate.

Barrels these days are generally fabricated from one of two types of steel, either chrome-moly or stainless. I'm not a metallurgist, and I seriously doubt if the reader is either. Therefore, I'll leave the steel composition at that. I will only say that there are several formulations for each type, with differing percentages of this and that element employed. For practical purposes, they are all fundamentally the same, in spite of the many fistfights along the way defending the superiority of one or the other composition. About the only thing I've learned the hard way is that European-produced stainless steel, particularly German made, contains a higher percentage of chrome than does U.S. stainless. As a result, European stainless barrels are somewhat more difficult to work with. Unless users are well equipped and really know what they're doing, they should leave them alone. (Ask me how I know.) Once threaded, chambered, and installed, they are excellent barrels, but to get those tasks performed can drive a Southern Baptist preacher to a barrel of bourbon!

In general, there are three methods of producing the rifling in the barrel. Each method has its proponents who swear by it, and its detractors who swear at it. There are also variations of each. For our purposes, discussing the three broadly is sufficient. They are cut rifling, button rifling, and hammer-forged rifling.





Two views of a turn-of-the-century (twentieth century, that is), barrel rifling machine made by Pratt & Whitney. A rifle manufacturer in Scandinavia originally used this one, before it found its way back to the USA. These days, it is in daily use at Danny Pedersen's Classic Barrel & Gunworks, in Prescott, Arizona.

I have several barrels that were rifled on this machine, and they are great.

Cut rifling is the oldest method and remains very popular. Many makers feel that an expertly made, cut-rifled barrel is the best of all. Such rifling is achieved by placing a hook-shaped cutter on the end of a long rod and attaching a gearing device to the rod that causes it to turn at a precise and prescribed rate. By making repeated passes through the bore with the cutter and removing a small amount of steel with each pass, the maker will eventually cut the grooves to the proper depth. Once the cutting is finished, the bore is lapped to remove any remaining burrs, rough spots, or imperfections.

In button rifling, a small carbide plug, or button, with the rifling formed in reverse, is either pushed or pulled through the bore under great pressure. This method “irons” the rifling into the surface of the bore. In the process, it also evens out minute irregularities in the surface of the bore and the resulting barrel usually has a very smooth bore surface. About the only criticism I have heard about button rifling is that the process causes a springing of the barrel steel, as the button is pushed or pulled through the bore. The theory suggests that the steel tries to return to its original size and shape after the rifling process is complete. If this theory has any validity, I think any movement in the steel would be microscopic in scope. Since the bullet is much softer than the barrel steel, I would also think any results coming from that would be negligible. Frankly, I think the theory is probably only so many horsefeathers. I have used more than a few button rifled barrels and have seen many more in use, with perfectly satisfactory results. Most custom barrel makers button-rifle their barrels these days.



Photo courtesy Pat Holehan

Pat Holehan, of Tucson, Arizona, is a hunting guide, outfitter, and rifle maker supreme. With his extensive personal hunting experience, as well as that gleaned from guiding many client hunters, he knows what a hunting rifle needs and doesn't need. He turns out rifles in walnut, laminated wood, and synthetic stocks. Shown here is one of his fully integral barrels with the quarter-rib, front sight ramp, sling swivel stud, and an extra recoil lug all machined from the same steel as the barrel.

The third method of rifling is called hammer-forging. In this method, a mandrel that contains the rifling in reverse is placed in the bore. A special machine then hammers the outside of the barrel down around the mandrel, which forges the rifling into the bore. As such, hammer forging is quite similar to button rifling, but hammer-forging does have a couple theoretical advantages over button rifling (or cut rifling, for that matter).

The forging process supposedly work-hardens the surface of the bore and results in a very hard bore surface — much harder than the remainder of the barrel. In addition, the forging process is said to rearrange the molecular

structure of the steel, presumably in a positive way. Again, because I am not a metallurgist, I'll have to take an expert's word on the subject and merely report what I've been told.

The F.W. Heym Co., a German rifle manufacturer, uses only hammer-forging for its barrel production and has one of the largest hammer machines in Europe. The company did an experiment a few years back that I found very interesting. In that experiment, Heym produced two barrels, and the initial steps in the production process were identical for both barrels. The billets were bored the same and the newly bored but unrifled surfaces were lapped identically. Both barrels were then hammer-forged on the same machinery with the same mandrel, one after the other. When the two barrels had completed the process, one barrel bore was again lapped, while the other was not. The barrels were then split lengthwise and the rifled bore of each compared microscopically.



E.R. Shaw is a commercial barrel manufacturer, in the vicinity of Pittsburgh, Pennsylvania. Shaw produces lots of barrels every day, both for themselves and for numerous other companies. Shaw replaced all its old, outmoded equipment several years back and has been turning out uniformly excellent barrels every since. Here is a batch of barrel blanks that have been deep-hole drilled and reamed and are awaiting the next step in the barrel making process.

As it turned out, the bore on the unlapped barrel was smoother than the barrel that had been lapped after rifling! This finding was both surprising and quite interesting to me. With such a small sampling, the results are statistically irrelevant, but quite fascinating nevertheless.

Each rifling method is capable of producing an exceptionally accurate barrel. Each method can also turn out terrible barrels incapable of minute-of-buffalo accuracy. Many variables account for why this is so, but perhaps the biggest one is the skill of the barrel maker, and this is regardless the method used. I am only guessing, but I suspect that the cut rifling method is probably the least expensive

guessing, but I suspect that the cut rifling method is probably the least expensive technique, because less costly equipment is required. This fact, if it is a fact, might well be offset by a greater labor requirement. That said, I'd estimate that the hammer-forging method is the most expensive, because very sophisticated and expensive machinery is required. That leaves button rifling somewhere in between. Once the capital investment in equipment is amortized, I suspect it is still more costly to do hammer-forged barrels, due to the cost of the necessary mandrels; a separate mandrel is required for each caliber and twist being produced. Of course the same is true with buttons, but a carbide button is considerably less expensive than a mandrel, and both are considerably more expensive than a rifling cutter. There are variations of rifling types, such as polygonal, micro-groove, and gain-twist. Whatever the rifling type, though, they are produced using one of these three methods.



The deep-hole drilling process, as done by E. R. Shaw. It looks simple enough, but it is deceptively

complex. Getting the bit that starts out at the precise center of the barrel blank at one end to come out in the center of the blank on the other end is not an easy job.

Heavy bull barrels have a reputation for being more accurate than sporter or lightweight models. In general, this is true. The heavier barrels are stiffer and dampen the barrel vibrations much more efficiently. They also take considerably longer to heat up. However, they weigh a ton, although some makers have made an effort to have the best of both worlds, milling flutes in the surface of the barrels to lessen the weight and better dissipate heat buildup. Varmint rifles, benchrest models, and specialty target rifles are usually fitted with stovepipe-sized barrels. Such rifles are great for their intended purposes, but carrying one of these tack-drivers up the Chugach Mountains of Alaska, or most anywhere else, for that matter, is out of the question. Weight alone rules them out as serious hunting rifles.

I have seen rifles with barrels so huge they reminded me of a 105mm howitzer tube, and yet were not particularly accurate. Likewise, I've seen pencil-sized barrels that were superbly accurate. All my personal rifles are hunting rifles, save three. Those three are all chambered for the excellent .22-250 cartridge, and I use one of them for the occasional varmint shooting I do. Each of these three rifles is fitted with a heavyweight barrel, while the rest of my battery have sporter-weight barrels.

The four most accurate centerfire rifles I own are a Heym SR-20 7mm Remington Magnum, a David Miller Co. custom .270 Winchester, a semi-custom Remington Model 700 Light Mountain Rifle, also in the .270, and a Granite Mountain Arms (GMA) custom rifle in 9.3×62. Each rifle will consistently deliver three-shot groups measuring under a ½-inch at 100 yards, provided I do my part. Three of these rifles are fitted with factory barrels, the Heym and the David Miler Co. with sporter-weights, and the Remington with a lightweight no bigger than my little finger. The GMA also has a sporter-weight barrel, but not being a factory tube, I suspect the GMA used a Danny Pedersen

cut-rifled barrel. The David Miller Co. custom is a very early Miller rifle, and he started with a Browning FN Mauser rifle. The factory barrel was so accurate he retained it.

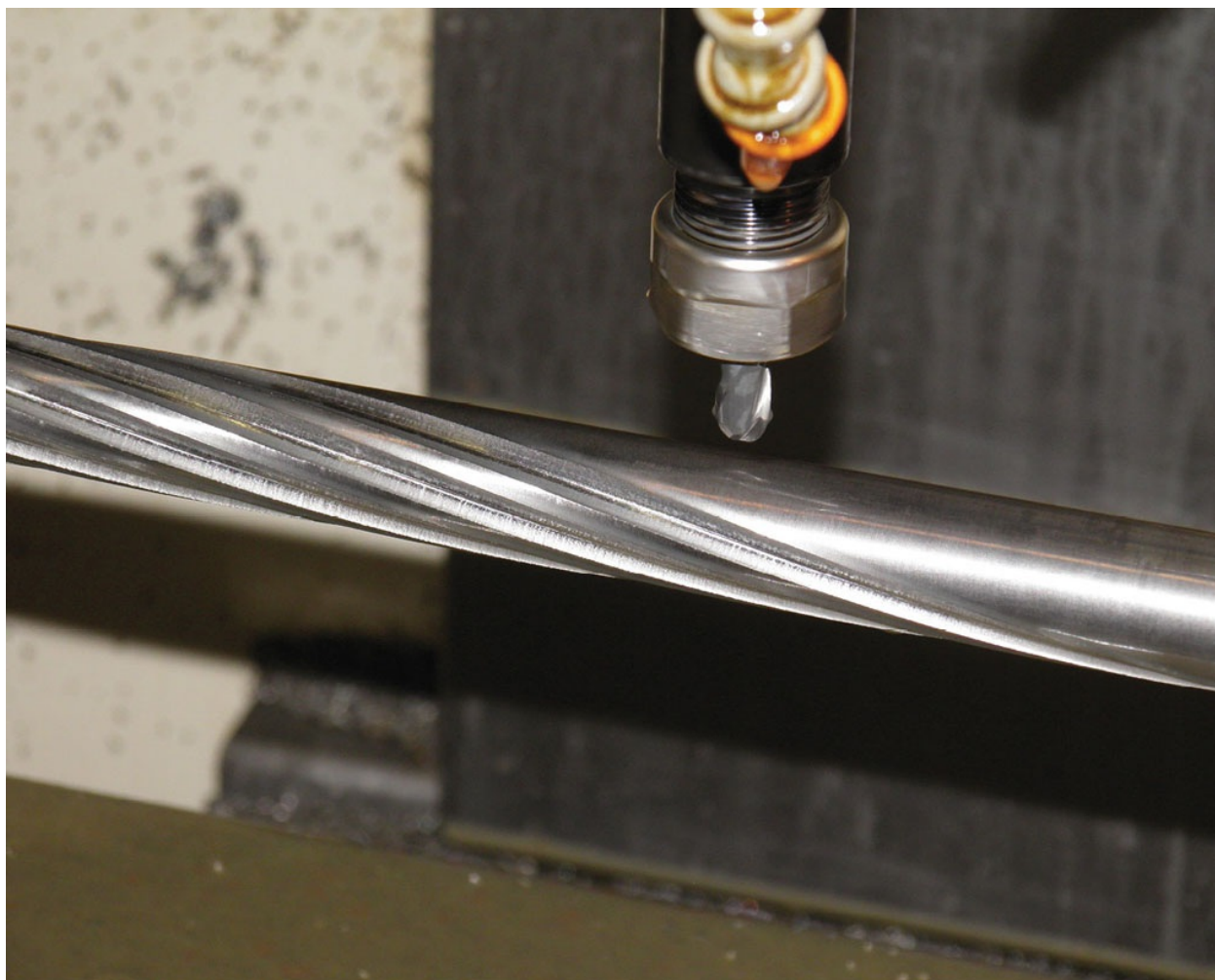


Here's a batch of barrels well along in the production process. These have already been rifled, chambered, and threaded. Most likely, these are OEM barrels for a particular model of rifle.

The tightest group I can ever remember shooting with any rifle was with the Miller. The three-shot group measured .263-inch, center to center. Since a .27-caliber bullet measures .277-inch, that is a very tight group indeed for a hunting rifle. With the little Remington Light Mountain Rifle, my wife shot a group that measured .357-inch — I haven't been able to get the rifle back from her since. The only modification to the Remington was a new composite stock. I sent the rifle to Garrett Accur-Light, Inc. in Ft. Collins, Colorado, for the installation of

time to Garret Accu-Light, Inc., in Ft. Collins, Colorado, for the installation of and bedding into one of its Ultra-Light stocks. Other than the stock, it is stock factory. The rifle, complete with scope and mounts, weighs slightly over seven pounds.

There have been a lot of discussions around hunting camps and in the sporting press on the subject of barrel lengths. Some argue that, to take advantage of modern magnum calibers using very slow-burning powders, it is necessary to have at least a 26-inch barrel. That is true, as far as it goes. A general rule of thumb is that shortening a barrel by an inch results in losing about 50 fps in velocity. Lop off two inches, and you lose 100 fps, and so on. The actual losses vary widely, but 50 fps per inch is good enough for discussion here. Still, there is a price to be paid for the long barrels. Except in wide-open country, it is a chore to hunt with such rifles. If there is a tree limb or a branch anywhere around, that long barrel will find it. All my rifles chambered in standard calibers sport 22-inch barrels. My magnum-chambered rifles have barrels one inch longer. I agree with something my colleague and pal Jon Sundra once wrote, to the effect that, if the cartridge he's using wouldn't get the job done in a 22-inch barrel, he'd change to a cartridge that would. That makes sense to me. If I have to trade a few feet per second in velocity for a shorter, handier rifle, I will.



Shown here is the setup for producing Shaw's patented helical fluting. According to Shaw, this process results in a 30-percent more rigid barrel, as well as provides added surface area for improved cooling, barrel harmonics, and the counteraction of rotational torque. They look pretty spiffy, too.

Which is the best method of rifling a barrel? Honestly, I don't know. I am by no means convinced one method is superior to the others. I personally use more hammer-forged barrels than any other type, but that wasn't planned. A few makers are still turning out cut-rifled barrels, apparently with great success, and button-rifled barrels are widely available in this country. Obviously, it is far more important how a barrel performs than it is how it was rifled. Unfortunately, performance can only be determined at the range, and, by then, it's too late to do anything about it other than to change barrels.

I have had perfectly acceptable results with barrels produced by each of the three methods. I have also had a lemon or two from each. The best advice is to

three methods. I have also had a remount of two from each. The best advice is to trust custom makers and let them use what they feel is best. Their reputations are on the line and they will surely use the barrel they have had the most success with.



Raw stock for future E.R. Shaw barrels, awaiting to be transported into the manufacturing facility.

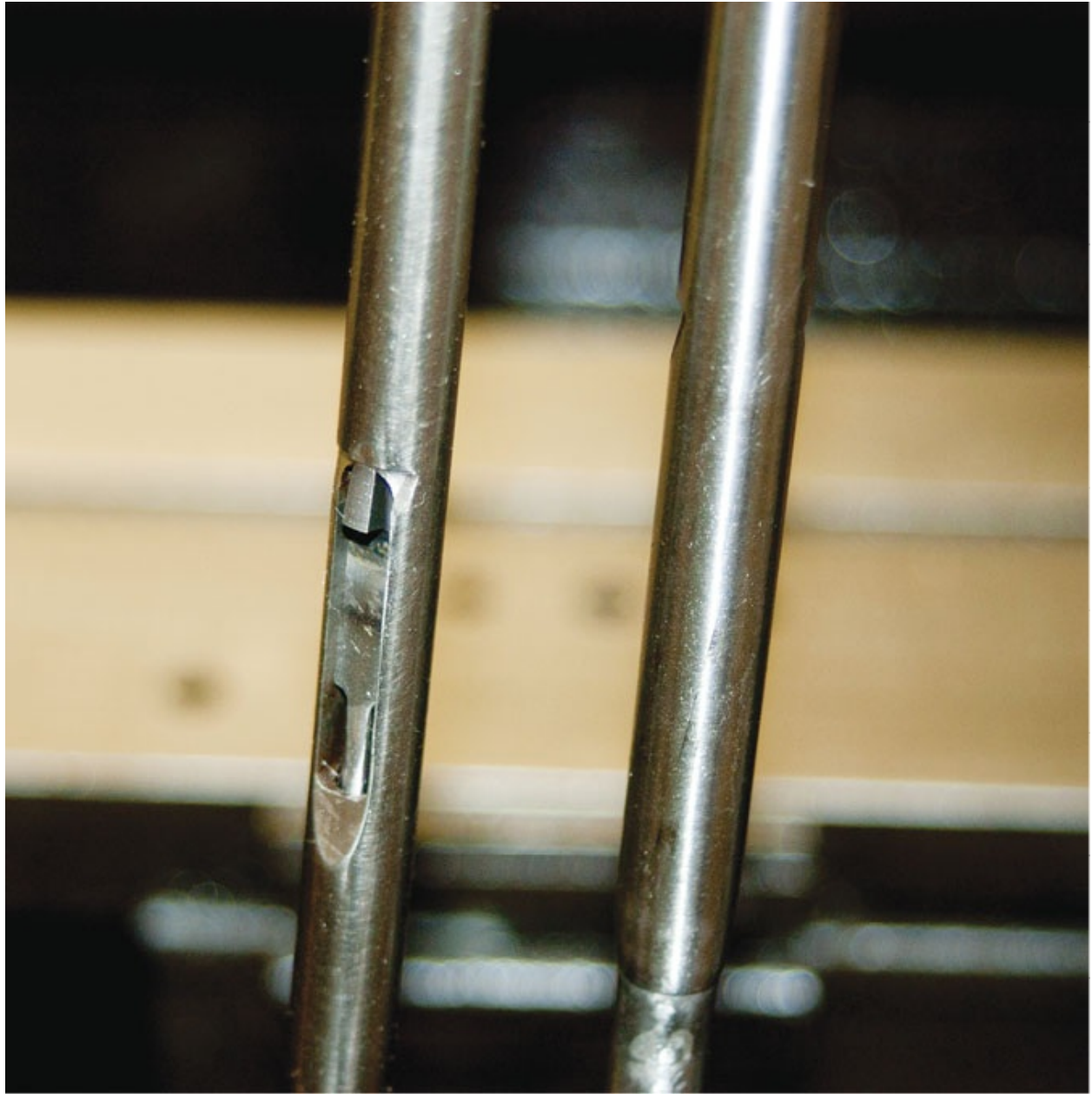
Barrel steel technology has come a long way the past few years. When some of the high-intensity magnum cartridges first came out, the steel used in barrel making wasn't quite up to the task. I am thinking here, particularly, of Winchester's .264 Magnum round. It never reached the popularity it should have. One reason was that it quickly developed a reputation of rapidly eating up barrels. I've read that some users of the cartridge experienced throat erosion so badly, that accuracy began to fall off after only a couple hundred shots. I can't

vouch for the truth of that, because I never had the problem. I did own one pre-'64 Model 70 chambered for the .264, but didn't shoot it enough to notice barrel problems.

Any number of high-pressure cartridges commonly used today would be hard on barrels not constructed to withstand the extremely high heat and pressures generated. Steel technology has apparently kept up with the developments, though, because it's been a long time since I've heard a premature barrel erosion complaint.

One of the barrel treatments that came along a couple decades ago was a process called "cryogenics." As I understand it, the process involves subjecting a barrel to temperatures around minus-300 degrees Fahrenheit for a period of time, usually several hours. Claims are that this process improves the accuracy by reducing stresses in the steel, which results in longer barrel life. I've read that some of the cryo treatments also involve heating the barrel, in addition to the low temperature exposure. The jury is still out on whether any cryo treatment is beneficial. About the only agreement I've seen on the subject is that it doesn't do any harm.

As a final note on barrels, metalsmiths are beginning to devote extraordinary efforts to them these days. They are buying large-diameter blanks from the various barrel makers and, when they get through machining, the resultant barrel is a sight to behold. Barrels that are octagonal or half round/half octagon, with integral front sight ramps, rear sight bases and/or quarter-ribs, sling swivel studs, and even integral recoil lugs milled into the oversized blank are not uncommon these days. The barrel on a rifle offers a lot of metal to play with, and some 'smiths are really taking advantage of that. The recent work I've seen is, by and large, fantastic.



This rifling cutter, left, was state of the art about a century ago, maybe even longer. It is still in use today. This cutter and its mandrel are used in the rifling machine to cut a very minute amount of metal from the bore with each pass. It is a very slow process, one that takes an hour or so for each barrel. Is it any wonder that few companies cut-rifle barrels anymore?



Here are a few H.S. Precision barrels in the early stage of manufacturing. I don't recall what model gun these barrels are for, but, whatever it is, it needs a heavy, heavy barrel.

7

Bells and Whistles

One thing among many that sets a custom gun apart from factory products is the number of bells and whistles it has. The list of available options is almost endless. Many features, such as quarter-ribs and checkered bolt knobs, have both functional and decorative value. Others, like skeleton grip caps and buttplates, are mostly ornamental.

A rubber recoil pad is simply functional and pretty much standard equipment on many rifles — but few enthusiasts will give one high marks for aesthetic appeal. Its function, of course, is to moderate the effects of recoil on hard-kicking rifles. For the custom gun, some makers cover this molded rubber appendage with a film of pigskin. This modification converts a most useful feature to one with great appeal, without a loss of functionality.

To my eye, a quarter-rib really looks sharp on an express-style rifle. They were originally developed, I think, to provide a flat mounting surface on the barrel on which to attach the rear sight. They work very well for this purpose. These days, though, they are generally more decorative than functional. Most rifles of today are scoped, and open sights, if there are any at all, are almost never used. Still, quarter-ribs and three-leaf folding express sights seem to go together like pancakes and syrup.

Some, no doubt in an effort to show off just how talented they are, will machine a quarter-rib from the barrel blank steel. While they're at it, they will generally also mill a front sight ramp, sling swivel stud and, sometimes, an extra recoil lug, all from the barrel blank. To provide enough steel to execute the intricate machining work, the barrel blank they start with approaches the size of

a cannon barrel. Doing the work in this manner is time consuming and requires great skill, but the finished product is wonderful, and the user never has to worry about the sights falling off!

Most often, barrel additions are actually machined separately and then soldered to the barrel. Properly done, it is almost impossible for the average Joe to detect whether a quarter-rib is integral to the barrel or sweated on later. I've even seen a couple examples, where the quarter-rib was fashioned from Damascus steel. One maker also custom made the scope mount bases from the same material. The results were wonderfully attractive and certainly unique.

Bolt knobs have become the recipient of functional decoration by makers and artistic decoration by engravers. The embellishment most often seen is checkered panels, sometimes one, sometimes two, sometimes more. The functional advantage of a checkered bolt knob is, of course, the non-slip surface the checkering provides. The decorative aspect deals with the skill with which the checkering is cut. The downside of checkered bolts is that one must exercise great care, particularly in a gun safe, not to scratch the stock of the firearm adjacent to it — they need only to touch for one to mar the other. Ask me how I know.

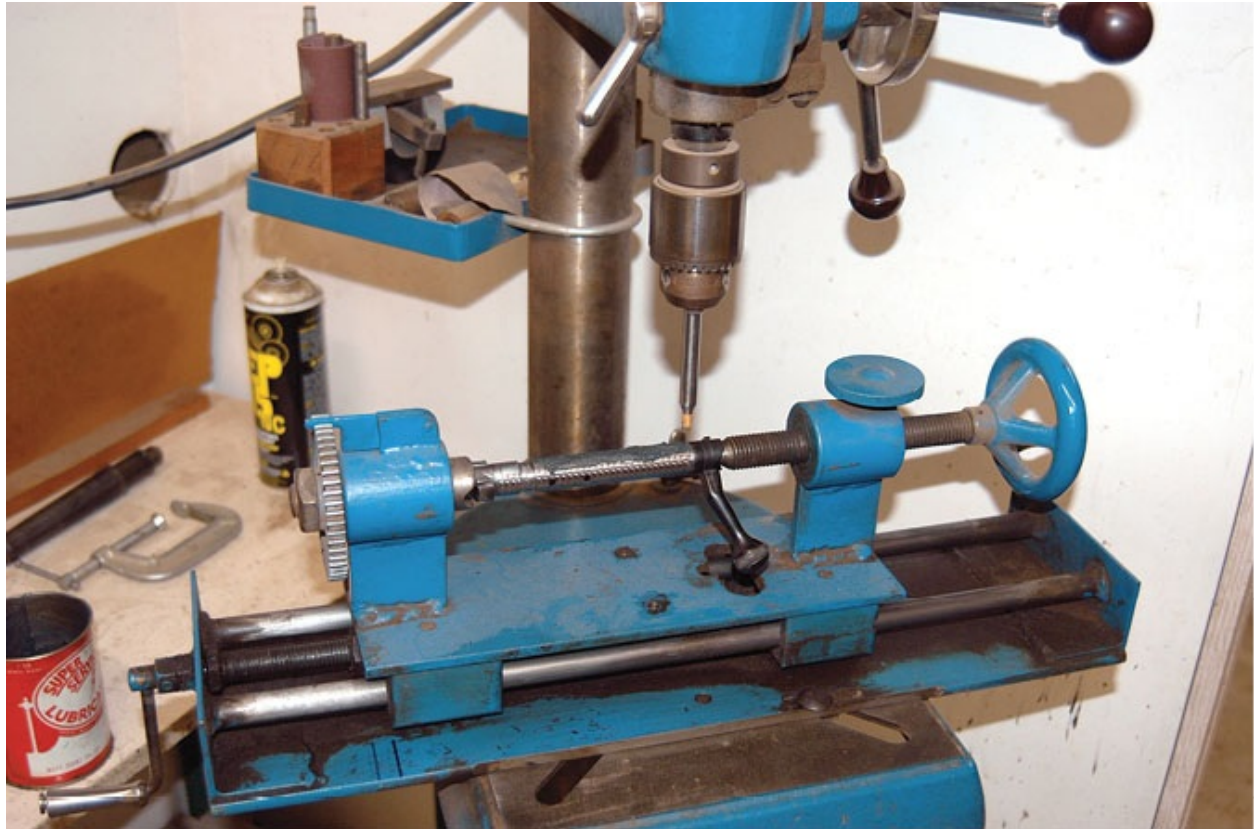
Sometimes the checkering is cut into a factory bolt knob. That is somewhat more difficult to do, because the top of the checkered diamonds cut into the steel are then at the same height as the surrounding material. Steel checkering files can be used at the center of the panels, but the edges are usually cut with engraving tools. A maker can also weld on a bolt handle with an oversized knob. This provides enough excess material to file away some steel and leave raised pads to receive the checkering. Using these raised pads permits doing much of the checkering with a metal checkering file, reducing the need for engraving tools. A really good set of fine-quality needle files is essential for the job, pads or no pads. Bolt handles that have the raised panels cast into the knobs are available on the market, as are bolt handles with the checkering already finished.



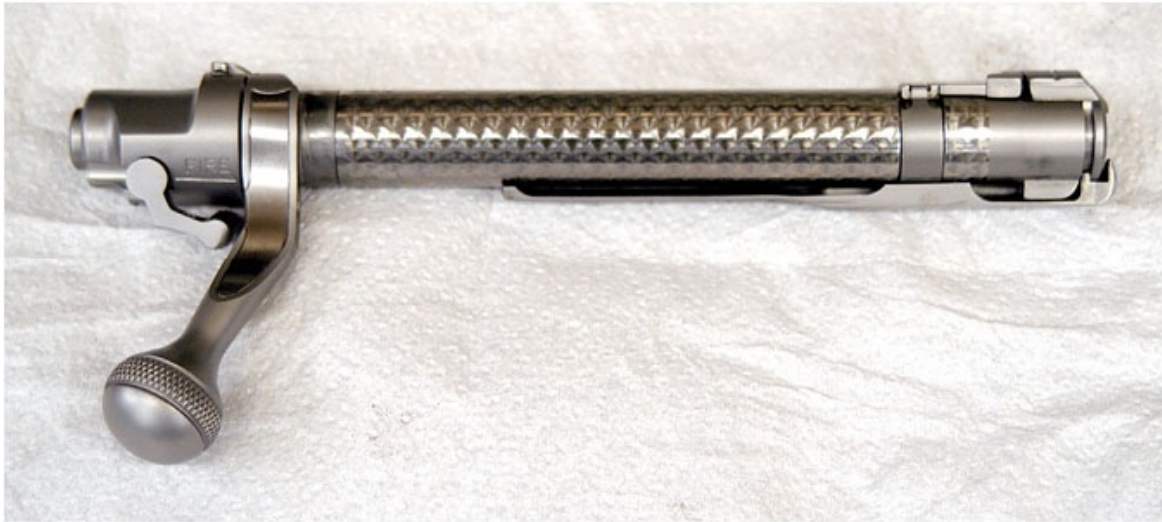
Photos courtesy Steve Helsley

A very unusual extra on an American-made firearm is this rising bite lockup on a Searcy double rifle. Invented by Thomas Bissel and patented, in 1879, by John Rigby in a joint venture, it served as a third

fastener in addition to the Purdey double underlugs. It was an ingenious system and worked wonderfully. However, it was very complicated and terribly expensive to make. Rigby discontinued using the system, in 1920. A few years back, a “new” John Rigby company formed up in London (in addition to one by the same name already existing in California), and vowed to recreate a double with the rising bite system. It tried, but, to my knowledge, never succeeded. American double maker Butch Searcy, on the other hand, did make one. It is pictured here, with the original Rigby system.



A bolt-jeweling fixture from the David Miller Co. shop. Bolt jewellery was originally done to provide small depressions in the bolt in which to hold oil. It sort of evolved into a feature more decorative than functional. The way Miller does it, though, it is still very functional. His “swirls” are much larger and deeper than the decorative type. He made this fixture when he first got into custom gunmaking and is still using it today.



This bolt has been jeweled and is ready to go hunting. Note that the “swirls” are larger in diameter than the decorative-type jewellery. They are also considerably deeper in the steel.





There are no visible screws attaching the front sling swivel stud and the grip cap on this David Miller Co. rifle. The hole in the sling swivel stud is a giveaway, of course. The screw is internal and accessed for tightening through the hole with a special tool. The grip cap is attached from the inside.



A widow's peak on the recoil pad matches the one on the ebony fore-end tip. They provide no functional advantage, but they sure look good.



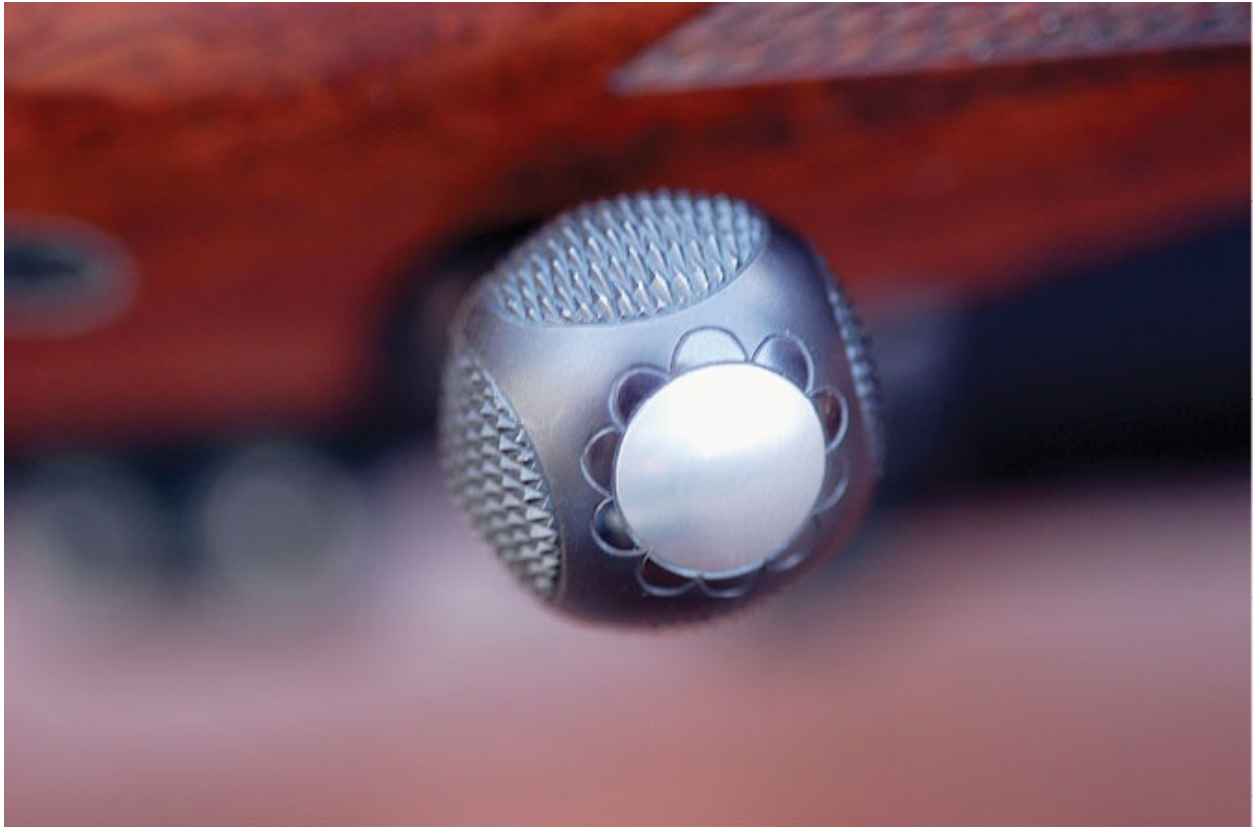
Another upgrade on a David Miller Co. Classic rifle is that there are no visible screws attaching the action and the stock. A spring-loaded cover hides the front screw, as shown here. Pretty neat, to say the least.

Some makers are content to install readily available scope mount bases from one of the various manufacturers. Others are not. One I know of, the David Miller Co., makes its own complete mounting system, including the rings. A few others make their own bases for use with factory rings, while still others will purchase factory bases and rings and modify them to suit their needs.

Stockmakers lavish a number of options on their work. Grip caps can be provided in many shapes and configurations; the days of a simple horn addition are long since past. Today, most are from steel, either solid or with one of various skeleton cutout designs. The same is true of buttplates. I think a matching skeleton grip cap and buttplate, with precise checkering beneath the skeleton cutouts, makes for a beautiful custom stock. If the stock is to be used for hunting, however, I would think twice about having such a buttplate installed. They are too damage-prone for my hunting rifles, though they work fine for a fine custom shotgun.

A variation of the skeleton buttplate that was somewhat popular at one time

was the heel and toe caps. Once again, they are more suitable for a fine custom shotgun than they are rifles — at least I think they are. Graceful steel heel and toe caps, perhaps scroll engraved, along with the end grain of the stock in between nicely checkered, surely makes for an elegant shotgun stock.



It wouldn't do to have the hole in a hollow bolt knob showing on a Miller rifle. Instead, they fashion an aluminum cover to hide the hole.



Coming across a half-round, half-octagon barrel is not an everyday occurrence, but neither is it rare. Coming across one that is half-round, half-octagon on the top of the barrel, and all round on the bottom of the barrel is unique. In addition, it is differentially blued, meaning mostly matte blued, but partly high-gloss blued, too. The only place I've seen such a treatment is on a David Miller Co. Classic rifle.

Although I may be chastised for doing so, I have chosen to include checkering under the category of bells and whistles. Admittedly, many checkering jobs should not be so categorized; a quality checkering job is, properly, a component part of any custom stock. It is only when the checkerer goes to elaborate patterns that it should change categories.

I am a sucker for precisely cut checkering. Nothing, in my view, with the possible exception of a magnificent stick of wood, is more important to the look of a fine custom stock than an expertly cut checkering pattern. It should be cut fine enough to look good, yet not so fine so as to lose its functional purpose. For me, that means about 26 lines per inch. The pattern used, whether a traditional point pattern or my favored *fleur de lis*, should provide enough coverage to be

both functional and decorative, but not so much as to be overpowering.

Unfortunately, some craftspeople seem to theorize that, if some checkering is good, more is better. To showcase their checkering skills, they use large, ornate patterns with lots of ribbons, curlicues, and didoes. Or they'll use checkering so fine that the results are almost slick to the touch.

I have done a fair amount of checkering myself and can attest firsthand to the difficulty involved in doing elaborate, finely cut patterns. Heck, even a fairly simple pattern can sometimes make a monk change religions. Regardless, in my eyes, overly complex patterns detract from, rather than enhance, a fine stock. If the checkering pattern is the first thing noticed on the gun, then it is, to me, overdone.



Photo courtesy Jim Kake

Photo courtesy Jim Kobe

Checkered steel buttplates are a nice touch on rifles that don't have a lot of recoil. This one is by Jim Kobe.



Photo courtesy Steve Heilmann

There are all sorts of ways of decorating the bolt release on a Mauser. Shown here is one of the more creative ways I've seen it done. Steve Heilmann did this treatment.

Any custom gun worth its salt is deserving of a custom housing. This can vary from a finely crafted leather gun case turned out by a qualified saddle shop, to a British-style oak and leather trunk. Case maker Marvin Huey has made a career crafting this latter type. Starting with a wooden box, Marvin fits the firearm and any desired accessories into the box, then covers the inside with either felt or ultrasuede. Once that is done, he covers the exterior of the case in flawless cowhide. If desired, he can also provide a canvas overcase, to protect the fine leather. His cases are superb, exhibiting a quality befitting any equal-quality custom gun. I have also become aware of another fine craftsman in the past two or three years, who also crafts an exquisite trunk-type case. Jim Wear works out of his Wyoming shop.

The options are what the custom business is all about. If a given client wants checkering from buttplate to fore-end on a gun, so be it. If nothing but a multi-thousand dollar oak and leather trunk chock full of accessories will satisfy their fancy, that's fine, too, it's their money.

So it is with all bells and whistles. The selection is vast. Looking for a place

SO IT IS WITH ALL BELLS AND WHISKIES. THE SELECTION IS VAST. LOOKING FOR A PLACE to start your custom creation? A quick look through the Brownell's or Midway catalogs will provide a good overview of readily available items and prices for the items just discussed. These prices do not, of course, include finishing and installation. That would be a subject of discussion between the maker and you.



Photo courtesy Jeff Wong

Another nice touch on the butt of a stock, either rifle or shotgun, is to install heel and toe caps. They don't work too well on heavy recoiling guns, but, on smaller calibers that have little recoil, they work great. They look wonderful and provide additional engraving and checkering surfaces. Jim Bisio did this one.



Photo courtesy James Anderson

Recoil pads are very useful on hard-kicking rifles, but I also find them useful on rifles with little or no recoil. Your gun is much less apt to go sliding off to the unknown, when equipped with a pad. However, even the best of the pads are not exactly pleasing on the eyes. Covering them in leather, usually pigskin, alleviates that failing. This is how it's done in the Glen Morovits shop.

8

Sights and Sight Mounts

This chapter will concentrate mostly on sighting arrangements for custom rifles. Although some custom handguns, particularly those crafted for the popular shooting competitions of today, are outfitted with rather exotic sights, most others haven't changed much in a century or two. Shotguns are in the same category, where it boils down to whether the barrel has one bead or two. So, it is the rifle that has motivated the development of a wide variety of sighting arrangements. This makes perfectly good sense. Both handguns and shotguns are, at best, short-range firearms. Fifty yards is a very long shot with either, and most shots are shorter, sometimes considerably so. At such "whites of the eyes" ranges, no high-tech developments for sighting assistance are required or wanted. Indeed, most scattergunners could make do quite nicely with no sights at all! Rifles, on the other hand, are commonly used in hunting situations at ranges out to a few hundred yards. Varmint shooters push the envelope even farther, and some competitive events feature 1,000-yard matches. With a hunting rifle, the quality of the sights can make the difference between a clean kill and a miss or, even worse, a wounded animal. In competition, the sights often determine the winners and the losers.

Before handgun hunters take me to task, I'm well aware that handguns for hunting are becoming more and more popular, and, so, the sighting arrangements are every bit as important as on a rifle. In fact, the handguns used for the sport are, by and large, handheld rifles with shorter barrels. Some are exceptionally accurate and, in the hands of an experienced shooter, very effective. Still, they are the exception, rather than the rule.

Up until about the time WWII kicked off, with variations, rifles were fitted with two types of sights. By far the most commonly encountered, probably 95 percent or so, was a bead front sight paired with a notched rear. Many rear sights were adjustable for elevation, and the notches took many shapes. There were simple “V” notches, “U” notches, square notches, and about every other shape one could come up with. The front sight blades were also varied, from the most common bead to a flat post. I have also seen them sharpened to a point, rounded and, on one odd rifle I recall, the front sight was triangular!

The second sight type was one of several forms of peep sights. Here we are referring to the rear sight only, because the front remained pretty much the same. The peep sights varied in complexity from a very simple bar with a hole through it and few adjustments to those with micrometer precision adjustments in both windage and elevation. The eyepieces were also adjustable, on some models; most permitted the eyepieces to be exchanged, with replacements providing either smaller or larger apertures (holes). Although far less common than the standard open sights, peep sights are very effective by comparison.

The English modified the open sight arrangement somewhat for their dangerous game rifles. World renowned for their double rifles, most were fitted with what we now call “express sights” for a rear sight and a bead front with a folding night sight insert. The folding bead was usually quite large in diameter and faced with warthog ivory. The theory was that the shooter would use the smaller bead sight for more precise shooting in normal light, but could pop up the night sight for better visibility in fading light or in dense cover. Most express sights feature one solid standing leaf sighted in for 50 yards, and one or more folding leaves sighted for 100, 200, and so on.



Photo courtesy Kevin Dilley

Premiere rifle maker D'Arcy Echols builds nothing but the best custom rifles. Even his synthetic stocked model, the Legend, is as good as man can make. He and his associate Brian Bingham leave nothing to chance. Below, this .505 Gibbs is a stopper rifle for short-range work in thick bush. A scope sight is not needed and could be a detrimental, so Echols fashioned a sturdy peep sight. Coupled with a good, heavy front bead, it does the job quit nicely.



The matching front sight for the .505 Gibbs peep rear sight is in the photo to the right. Notice that the bead is white and is quite large. Both features are necessary for stopper rifle sights, in my view. The biggest single failing that I see on large-bore dangerous-game rifles is that the front sight bead is much too small. The makers and sellers of such beads have either never hunted dangerous game in the bush, or they have very young eyes.



This front sight arrangement is perhaps the best of both worlds. It features a small bead (which is pretty much useless for my old eyes) and a flip-over large white bead night sight. Since this is my personal .458 Lott and it has accounted for four Cape buffalo to date, this is the position at which the front sight remains at all the time. This sight is from New England Custom Gun.



Above is my custom pre-'64 Model 70 chambered for the .458 Lott cartridge in its original guise. The rifle had a bunch of hands on it, but most of the original work was done by Kentucky maker Craig Click. Craig square bridged the action and then milled the bridges for Talley quick-detachable mounts. I use a Leupold 1.5-5x scope and I have a second identical scope and rings that I sight in, along with the primary scope, as a back up. I keep the low-powered scope mounted for normal use, but, if the going gets dicey, I remove the scope and rely on the open sights.



At right, the matching rear sight for the night sight on my .458 Lott. The shallow “V” works just fine for me, although a large peep would work, too.



Probably the finest and most dependable scope mounts made are those crafted for each David Miller Co. rifle produced that requires a scope (almost all). David built a .338 Win. Mag. rifle for a well-known outdoor writer about 40 years ago. He spoke with the writer about 10 years ago and was told that the scope had never needed adjustment during its ownership, more than 30 years, at the time. It had been used all over the world, including for several trips to Africa and Alaska. I know of no other scope mount that would perform like that. Of course, the Miller mounting system costs as much as a good used car, so the comparison is a bit skewed.



Here are a couple sets of Miller scope mounts that he is in the process of making. Needless to say, there is one hell of a lot of work involved in making a set, and that's when one knows how to do it. Starting without that knowledge, quadruple the time and work.

These days, sighting arrangements other than a scope are seldom seen. If also equipped with other sights, they are usually there for emergencies, such as when a scope might break, and otherwise never used. Scopes of all types and magnifications are available, with models for almost any possible use and in all price ranges. About the only exceptions to the scope takeover are on heavy-caliber dangerous game rifles, on rifles tailored for competition where scopes aren't allowed, and on rifles intended for heavy cover, short-range hunting situations (primarily eastern whitetail hunting). The chances of encountering a hunter in the field and armed with a rifle that isn't scoped is pretty remote these days. Many custom rifles, and not an inconsequential number of factory models, are delivered with no sights at all.

I personally like the sleek looks of a rifle with no sights other than a scope. I think they have a cleaner look about them. Still, there are shooters who insists on

fixed sights in addition to the scope. Most in that category have had a bad experience with their scopes in the past.

A pal of mine hunts Africa, and his rifle has both factory-installed open sights and a premium scope in EAW quick-detachable mounts. On one trip, he unpacked his gear in camp, after the several thousand-mile trip, then took out his rifle for a quick check at the camp's makeshift range. When he looked through the scope, the reticle was missing! Well, it wasn't exactly missing in that it was still in the scope tube somewhere, but it sure wasn't where it was supposed to be. Not to be deterred, he simply removed the scope and had a very successful hunt for the next 10 days using only the open sights. Based on this experience, he won't have a rifle unequipped with additional sights.

Germany developed the majority of early scope models. Compared to what is available today, they were pretty frightful affairs. They were fragile, fogged every time the weather changed, and cost an arm and a leg. The mounts available for them were equally inadequate. It was a good beginning, but both had a long way to go.

Scopes floundered along rather aimlessly, until Bill Weaver came onto the scene. Weaver developed a good scope that was reliable, relatively sturdy and, while not really cheap, was within the financial reach of most hunters. He also developed a reliable, uncomplicated, and very inexpensive mount with which to attach the scope to one's rifle. These events marked the beginning of the dominance of the scope and the slow demise of all other sighting systems.





This is a rather ingenious front sight arrangement from the late metal wizard Tom Burgess. The front sight blade retracts into the ramp when not in use. A quick push on the front of the ramp releases the spring-loaded blade, which then pops up into position.

These days, it's rare to encounter a rifle in the field that is not scope-sighted. Even in those areas that require shotguns with slugs for deer hunting, more and more scatterguns are showing up with scopes. The same is true with blackpowder guns. Except for the guys who run around clad in buckskins and toting flintlocks, scopes are now the sights of choice on more modern blackpowder models.

Initially, available scopes were fixed-power models of low magnification. Most were in the range of 1.5x to 4x. As the optical scope technology advanced, more powerful models came onto the scene. It didn't take long for the 4x and 6x models to edge out lower-power models. Eyes got older and weaker, and more magnification became the norm. Finally, someone came up with the idea of developing a scope that could be varied in magnification as the situation demanded. At the mere twist of a ring on the scope tube, the magnification could be changed to accommodate long shots, close-in shots, and everything in between. That sounded like the best of both worlds, and these days, the variable scope is the scope of choice. Fixed-power scopes are slowly fading in popularity.

Variable-power scopes initially had a number of bugs. Early models were more fragile than fixed-power models, far more susceptible to leakage and fogging and, with all the inside moving parts, more apt to develop mechanical problems; a fair number of the outdoor press at the time recommended against using them. Still, the concept was a good one, and the shooting public continued to demand variables over fixed-power models. The scope manufacturers responded by improving variables to the point where they are, practically speaking, every bit as durable as fixed-power models today.

Most of my scopes are variables. It has been my experience, though, that variables are not used in practice according to the theory. While the capability is there to alter the magnification of the scope according to the situation, most don't use them that way. If the scope on my rifle happens to be a 2-7x variable, it is invariably set at 7x all the time. Of course, I could change it to another magnification if I wanted to, but I don't. Neither does anyone else I know. I

guess that just knowing we could change them if we wanted is justification enough for most users.

Reticles have come a long way. Early on, just about every manufacturer had a series of special reticles for their scopes. They varied in complexity from a simple dot to just about everything the maker could cram into the tube. The Germans have turned out a few doozies. Of particular complexity are some of the rangefinding/range-compensating models. In many cases, the user has to be a rocket scientist and carry a laptop to figure out how to use them. Most, but not all, of that type have thankfully gone the way of the dodo bird. In today's American scopes, some form of the duplex reticle is far and away the most popular design. There are variations, but all have four crosswires heavier at the perimeter and tapering to fine crosswires at the center. It is a very good reticle for hunting.



Photo courtesy Christian Kimber

Ralf Martini crafts these open sights for a .404 Jeffery. The rear sight in the quarter-rib consists of one standing and one folding leaf, each with a shallow “V.” The front sight is a replaceable bead that, if the rifle were mine, would be replaced with a larger white bead.

There's a wide range of scopes on the market in the \$250 to \$500 range. They are all good tools that work well and do the jobs they were intended to do, offering good value for their cost. In the past few years, several European manufacturers have made inroads into the American market, with premium quality (and priced) scopes. Optically, most are superior to American models, clearer and brighter; they will often add a full hour to the hunter's day, that hour

made up of the most productive hunting times of an extra half-hour at both dawn and dusk. This is a great advantage, but one achieved at greatly increased cost.

Obviously, there are many hunters willing to come up with the added cash to buy one, because the European models are selling well. This fact has not gone unnoticed by the American competition. Some, most notably Leupold, have added a European line of scopes to compete. How well the added expense of higher quality scopes will be accepted by the shooting public remains to be seen. Leupold offers several model levels, which get more expensive and of higher quality as they go. Last I checked, there were four or five different levels. Leupold also has the best customer service in the business. If a Leupold scope breaks, for whatever reason, send it back and Leupold will either fix or replace it. Can't get much better than that.

Scopes are very durable these days, and almost all are sealed against moisture. No scope, however, is more durable than its mounting system. Mounts these days are universally strong and effective. Many makes and designs are on the market, but most fall into the category of two-piece base or one-piece base bridge mounts. They vary in price from perhaps \$30 to \$100 or more. Properly installed, they all seem to work well.

A few mounting systems have appeared on the market as quick-detachable mounts. They tout the ability to quickly remove the scope and then remount it, with no loss of zero. Some early side mounts were quick-detach and worked well, but they are seldom seen now. Most top-mount models I've seen, though, were not very accurate in returning to zero. The one I've used most, and if properly adjusted it does return to zero, is the EAW mount from New England Custom Gun. With this mount, all that's necessary to remove the scope is to unlatch it at the rear mount with a lever and swing the scope to the front. It can be removed and remounted in a second or two. The downside is that a set of EAW quick-detachables run \$400!

There's no question that scopes are the sights of choice these days. But where do we go from here? I hope we reverse the trend in huge and heavy

scopes. I realize this is a consumer-driven development and the industry is merely responding. Users want higher and higher magnification and better and better optics. This combination leads to larger and larger scopes. Some I've seen must weigh at least a quarter of their rifle! It is a tribute to our mount manufacturers that we don't see more of those huge scopes flying over the range bench when shot. And, if you carry one very much, you'll quickly learn why four-wheelers have become so popular.



Photo courtesy Mustafa Bilal

Above is a magnificent job of making a single standing leaf express sight for a large-bore rifle, in this case a .500 Jeffery: functional and lovely. All the work by Steve Heilmann and engraving by Denis Reece.



Photo courtesy Steve Heilmann

This is a good example is a good example of express sight overkill, in my opinion. For a large-caliber express rifle (this one is a .416 Rigby), one standing leaf, presumably filed in for 50 yards, plus folding leaves for 100, 200, and 300 yards, are more for show than practical. The work is beautiful, just not very practical. Denis Reece did the splendid engraving.

I suspect the next development will be the addition of compact laser rangefinders within the scope. Several manufacturers have already done the incorporation, but none I've seen could be described as compact. No doubt it's coming. Once the manufacturers conquer the obstacles of price and size, it will perhaps be a wonderful development. Most hunters are poor at estimating range. The technology is there, it is now a matter of refinement. Then someone will figure out how to connect the rangefinder to the reticle and automatically

calculate and change the reticle for that range. Wonder if we can find someone to squeeze the trigger for us?

I still remember my first calculator. I paid \$99.95 for it at a special sale. It was the size of a couple boxes of .270 cartridges and would add, subtract, multiply, divide, and perform a couple other functions. Today, a similar calculator is the size of a credit card or smaller and costs \$1.99, if that. Many places give them away as promotional items. Hopefully, laser rangefinders will progress similarly. Keep in mind that, if they do, there is one downside: Those interesting tall tales of 600-yard shots told around the campfire will disappear!

9

Engraving, Carving, and Inlays

About the time Adam started chasing Eve around the apple tree, humans acquired a craving to decorate things. If they could find nothing else to satisfy this primeval urge, they decorated themselves. We sometimes think of tattooing as a modern fantasy, but it isn't. Prehistoric mortals cut themselves open with flint knives and rubbed all sorts of pigmented concoctions into the resulting gashes. When healed (and provided the recipient didn't die of infection), the tinted scars made the bearer different from everyone else. Keeping up with the Joneses was both painful and risky, in those days.

As weaponry evolved, it was quite natural that one's club, stone hatchet, lance, sword, bow and, later, firearm would become the recipient of ornamentation. That trend continues to this day, and while I've seen some truly terrible work, some being done on modern firearms today is so good it's mind-boggling.

Good engraving (or bad, for that matter), is totally a result of individual talent (or lack thereof). The tools used are simple, relatively inexpensive, and play little role in the quality of the finished product. It is the wielding of them that creates a masterpiece or monstrosity. The best engravers could turn out works of art using ground-down screwdrivers for their gravers.

Engraving

There are several different engraving styles. Styling varies from deeply chiseled, bas-relief engraving associated with the Germanic school of artisans, to

delicate and seemingly fragile *bulino* engraving executed to perfection by the best of the Italian artisans. Germanic engraving, by and large, is bold, eye catching, and can be appreciated from a substantial distance. On the other hand, the *bulino* engraving by such masters as Firmo Fracassi and the late Angelo Galeazzi requires a magnifying glass to fully appreciate its magnificence.

English engraving is famous for delicate scrollwork, often with a floral design. It seems to me that cutting the tiny scrolls, one after the other for hours on end, would drive a Mormon to martinis, but the Brits seem to thrive on it. It's fair to say the Italian, German, Austrian, or Belgian engravers would head for the nearest moonshine still, too, if they had to execute that style of engraving very often. My dear friend and exceptionally talented engraver, the late Erich Boessler, did a few commissions for some of the London gun makers, but eventually gave it up and concentrated on his native Germanic styling. He told me that it drove him nuts, cutting those teeny tiny scrolls, one after the other. He could do it, and he was very, very good at it. He just didn't want to do it.

American engravers, typical of practically everything else in American society, execute patterns that run the gamut. I have seen engraving done by American artisans that rivaled the best of the Italian *bulino* styling, yet, on the very next table were examples of deep, bas-relief designs that could not be distinguished from those done in the Old Country.





A couple photos of the magnificent engraving of Mike Dubber on this Colt Single Action honoring Wild Bill Hickok. This pistol has won several engraving awards.

Generally, the styling executed by individual engravers depends on the designs favored by their teachers or, if self-trained, the motifs executed by their idols. Eventually, most artisans develop their own variations. If successful in their pursuits of excellence, individual styles evolve to such a degree that the work can be immediately recognized as theirs. A good example is the craftsmanship of the late Master Engraver Lynton McKenzie. The manner in which he executed his scrollwork, his trademark engraving, so to speak, is instantly distinguishable. This is true for practically all engravers at the top of their profession.

As mentioned, the tools of the trade are simple and mostly inexpensive. The most expensive item on the engraver's bench is usually a good vise. Most, but not all engravers, use some form of a ball vise, which, according to the latest Brownell's catalog, runs about \$550. Unless the engraver uses one of the power tools, such as the Gravermeister, or uses a microscope, a good vise represents their largest shop investment. (By the way, not very many engravers I know personally use power tools. Most rely on a chasing hammer and handheld

gravers.)

When I traveled to Germany for the first time, in 1961, courtesy of the U.S. Army, I had a few goals in mind, the most important of which was to find a good engraver to decorate a few of my personal firearms. Unfortunately, I did not succeed in that goal on that trip. I came back home, in 1964, with a new bride and a son on the way, but not a single engraved firearm.

Five years later, Uncle Sam decided I hadn't learned enough German the first time and sent me back to the Old Country for a second tour. That trip I had the good fortune to locate a Master Engraver. As it turned out, I was already familiar with his artistry, but didn't even know his name! I had seen examples of his work on the covers and in stories published in our various American gun magazines, but credit for the work had always been attributed to the company that had commissioned the engraving, not to the engraver himself. In fact, his name had never even been mentioned, that I recall. The Master Engraver I am referring to, Erich Boessler, lived and worked in Muennerstadt, a small town not far from the pre-war gun making center of Suhl. Muennerstadt is located on what was the western side of the Iron Curtain, while Suhl was on the eastern side of that former divide. Boessler, a native of the Suhl area, sneaked across the border as a young man and went to work as an engraver for the Heym factory, that company having preceded him in escaping to the west.

After a few years as one of several factory engravers, Boessler earned his certificate as a Master Engraver and struck out on his own. He continued to work with Heym on special projects, but also accepted commissions from other factories, as well as those from private clients. He also tutored apprentice engravers and helped them learn their craft; he usually had at least one finished engraver in his shop who was studying to become a Master Engraver. When I first met Boessler, one other engraver worked in his shop, Rolf Peter. Peter was studying to earn his Master's certificate under Boessler's tutelage. He did so and went on to become a really fantastic artisan.





Photos courtesy Jim Blair

Jim Blair engraved these floorplates, both in an African motif, but using different styles. The one on the top exhibits beautiful gold inlay work, while the work above revolves around the bulino elephant scene.

Wonderful engraving.

Boessler was one of the most versatile engravers I have ever known. While he was perhaps at his best when doing traditional Germanic-style engraving, he was equally proficient when cutting English scroll, Italian-style banknote, or *bulino* engraving. If there was any form of engraving he couldn't do exceptionally well, I've never come across it.

Erich Boessler did a lot of work for me and, over the years, we became close friends. I observed the Master at work in his shop for many, many hours. Numerous fine engravers who were studying for their coveted certificates that identified them as Master Engravers passed through his shop. All I know who studied under him went on to become outstanding engravers. Erich, regrettably, developed serious heart disease and suffered a massive heart attack, as he planned his sixtieth birthday party. A few years after that, I lost my pal, and the sporting world lost a tremendous engraver, to a second coronary.

Another German Master Engraver who's a good friend of mine is Claus Willig, from Schweinfurt. I first met Willig through his American agent, Dietrich Apel. At the time, Apel owned Paul Jaeger, Inc., and, on a visit to Germany, I stopped in on Willig for a visit. He'd studied under his father, also a Master Engraver, and although he has done beautiful work for years, I think he is doing the very best work of his career right now.

Yet another engraver friend was the late Lynton McKenzie. McKenzie's work has been publicized for years, and he was among the very best at his art. His style is distinctive and, to a knowledgeable enthusiast, his work is instantly recognizable. McKenzie was an Australian by birth, but did much of his work in the UK, and then in the USA. When he passed away, he was living in Tucson, Arizona.



Be on the lookout for this up and coming engraver. Brian Hochstrat is young and raring to go. I first met him a couple years ago, and he's been turning out really amazing work.



Photos courtesy Sam Welch

I guess Master Engraver Barry Lee Hands follows the philosophy that, if you don't feel like engraving anything else, engrave your engraving tool! That's exactly what he did here.

An American engraver I met a few years back is the most talented of all I have seen on this side of the pond. His name is Winston Churchill. No, he is not, of course, the late British Prime Minister, and I doubt he is even remotely related. He is, instead, a native New Englander, from Vermont. I have seen many examples of Churchill's artistry and, if anyone is better at scratching at steel, I have yet to see it.

Another American engraver doing outstanding work is Ron Smith. I first met Smith when I presented the *GUNS Magazine* first annual Award of Excellence, at the 1995 combined Firearms Engravers Guild of America (FEGA)/American Custom Gunmakers Guild (ACGG) show in Reno, Nevada. The winning entry in the competition was a wonderful single-shot rifle built on a Hagn action by the late Maurice Ottmar. Smith executed the extraordinary engraving on the rifle. He is located in Fort Worth, Texas, and his work is so good that I must have been under an Arizona rock somewhere for not recognizing his talents earlier.

A dear friend of mine had a wonderful custom rifle built up by the late Jules LaBantchni, of Santa Monica, California. The Mauser action .338 Winchester Magnum was absolutely exquisite. To top off the project, my pal sent the rifle to California engraver Robert Swartley, along with a detailed sketch of how he wanted it engraved. Swartley executed the pattern wonderfully. A few years after the project was completed, my friend passed away, at a much too young age. He bequeathed the rifle to me in his will. That was the only sample of Swartley's work that I have ever owned, but I have seen numerous other examples. His engraving style is very distinctive and always executed to perfection.

Engraving is not solely a male bastion. One lady doing superb work is Lisa Tomlin, of Huddleston, Virginia. A relatively recent major project of hers was doing the engraving on a Safari Club International auction rifle. Built by gun maker John Bolliger, of Mountain Riflery, the "Elephant Rifle" was the final gun

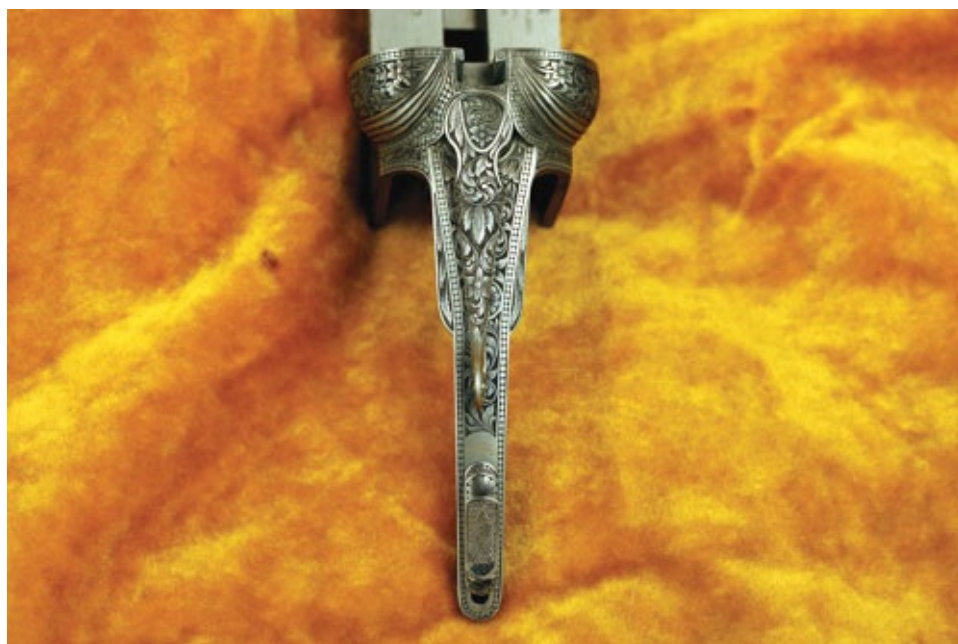
in an SCI five-year, five-rifle project. This magnificent rifle was adorned with Tomlin's equally splendid engraving.

Mentioning engravers by name in a piece such as this is always fraught with peril. Space doesn't permit mentioning them all, and those omitted are often offended. I intend no such slight to anyone. I have cited only those engravers whose work I am personally well acquainted with. Sam Welch, Bob Evans, Marty Rabeno, Mike Dubber, Ray Viramontez, Barry Lee Hands, Lee Griffiths, Diane Scalese, Joe Rundell, Andrew Biggs, Brian Hochstrat, C.J. Kai, and numerous others all do exquisite work.

So far, I've not mentioned any engravers from Austria, Belgium, England, and only a couple, one of who is recently deceased, from Italy. Here again, I mean no offense by the omission. I have seen little of their work personally, although I have seen much of their artistry via published photos. I will mention a few that I know only by reputation.

The best of the Belgian engravers was, I believe, Louis Vrancken. Vrancken was, as I understand it, the chief engraver for the F.N. factory for many years. I believe he also headed the Belgian engraving school. Examples of his work that I have seen publicized, were superb. My old engraving pal Erich Boessler knew Vrancken well and often commented to me how really good he was. Alas, Vrancken passed away several years ago.





Photos courtesy Bob Strosin

A fantastic engraving job on a Parker shotgun, done by Bob Strosin. This is a similar pattern to the original A1-Special pattern.

The great Austrian engraver, the late Albin Obiltschnig, was highly publicized in this country, until his death. His Germanic-style engraving was very well done. Another Obiltschnig, Hans by name, has also done wonderful Germanic-style engraving. I assume that the younger Obiltschnig is a relative of Albin, perhaps even his son or grandson, but that is pure speculation on my part.

Aunt, perhaps even his son or grandson, but that is pure speculation on my part.

An Austrian engraver who made quite a splash for a few years in this country was Franz Marktl. I have heard nothing about him in recent years and don't know if he is still in the business. His work though, was excellent. All the work of his I've seen was done in the Germanic-style.

In recent times, I have seen a few firearms from the Ferlach, Austria, shop of Peter Hoffer. His work is absolutely exquisite, and most of the few pieces I've seen of his were quite unusual. The engraver(s) that Hoffer uses on his creations are equally fantastic. I'm assuming, here, that the engravers he commissions are from Austria, but, again, I speculate. All of his work I've seen was done in the *bulino* style, much more reminiscent of Italian work than Austrian/Germanic. Whoever they are and wherever they are from, the work is spectacular.

Although I am sure there are many fine English engravers, I personally know of but two. Ken Hunt has engraved for most of the prestigious English makers, and his talent has often been publicized here. From the photos I've seen, his work is superb. Another, whose exquisite artistry I became acquainted with when doing a story on a new (at the time) English maker, Symes & Wright, is Rashid el Hadi. He was the chief engraver for the company, and his work was magnificent. He is a young man who will be around for many years to come. Alas, Symes & Wright did not survive as a company and folded their business after a few short years. What became of Rashid I have no idea.

There are many wonderful Italian engravers. Two who are particularly outstanding are the already mentioned Firmo Fracassi and the late Angelo Galeazzi. These two long ago perfected the art of *bulino* engraving. This wonderfully delicate style is so ethereal that a magnifying glass is often required to fully appreciate it. Other Italian engravers at the top of their profession are Gianfranco Pedersoli, Fausto Galeazzi, Claudio Tomasoni, Aldo Rizzini, Giancarlo Pedretti, Stefano Pedretti, and numerous others.

No matter what country an engraver happens to call home, artistic talent and the ability to convey that artistry to steel know no nationality. An excellent way

to study engravers and engraving styles is to obtain a copy of one or more books on the subject. While engraving books are not as commonly seen as those on many other subjects, several have been printed. An Italian, the late gun maker Mario Abbiatico, wrote one of the best that I know of, *Modern Firearm Engravings*. This book, printed in English, was copyrighted in 1980. In 1982, an expanded version of the same tome was printed in Italian, but, to my knowledge, was not published again in English. The Italian book is entitled *L'incisione delle Armi Sportive*. Both books are beautifully illustrated and have excellent references, but I doubt seriously if either book is still in print. It might be necessary to cruise used bookstores or subscribe to listings from sporting book dealers, to find a copy, and eBay might be helpful, as well. If a copy can be found, it is well worth the effort. Italian engravers did most of the engraving pictured in either book, but it also features illustrations of engraving from Germany, Austria, Belgium, Great Britain, and the USA. There are also short biographical sketches on many of the individual engravers.

Another excellent book on the subject is *American Engravers*, by C. Roger Bleile. Although it is a bit dated, also copyrighted in 1980, it is nevertheless very useful. Much of the information it contains is surely obsolete, but many of the featured engravers are still going strong. Unfortunately, the book is out of print and used bookstores or specialty dealers are probably the only sources for a copy. I lucked out and found my copy in a small town used bookstore. Bleile and Steve Fjestad have done us a big favor by coming out with a new engraving book a couple years ago entitled *American Engravers — The 21st Century*. It is an updated and greatly expanded version of the original. In both books, the photography is excellent. I think they point out examples in excellent detail of really good engraving, as well as examples of work that's pretty mediocre. From a personal perspective, there seems to be only two qualities of engraving, super good and terrible. Middle of the road engraving just doesn't seem to exist.



Photos courtesy Barry Lee Hands

Barry Lee Hands engraved this Sharps rifle above with buffalo hunting scenes. It is a tremendous job.

Darryl Lee Harris engraved this Sharps rifle, above, with buffalo hunting scenes. It is a tremendous job, and there is obviously no end to his talents. The wonderfully engraved floorplate below is from the Old Country, Germany. A student of my old pal Erich Boessler, Peter Ewald, has been a Master Engraver for a long time, and he did a lovely job on this floorplate. The old Master himself, the late Erich Boessler, engraved and gold-inlaid the pre-'64 Model 70 Winchester floorplate at right many years ago, at least 30 or more.







Photo courtesy Barry Lee Hands

Barry Lee Hands engraved and gold-inlaid this .25-caliber pocket pistol in a pattern he's used a fair amount lately. It is magnificent work, from a very talented engraver.



Photo courtesy Sam Welch

Western-type firearms, western engraving scenes, and Marty Rabeno go together like ham and eggs. Two out of the three come together on this project. Here we have a Sharps buffalo rifle and Marty, but the hunting scenes are not representative of his normal western scenery. Even so, it is masterfully done, as is all of Rabeno's work I've ever seen.

About the same time as the first edition of *American Engravers* — *The 21st Century* hit the bookstores, author R.L. Wilson's latest book also appeared. Entitled *Steel Canvas — The Art of American Arms*, it is typical of Wilson's fantastic books. It features 365 pages of mostly wonderful color photographs highlighting magnificent examples of the gun maker's art. It is a must-have book for the library of any fine arms aficionado.

A few periodicals provide coverage of engraving and engravers, as well as gun makers and custom guns. For a long time, *Rifle Magazine* had a feature in most every issue called "Custom Corner," which showcased the work of a particular maker. I haven't seen it in an issue in awhile, so perhaps they have dropped it. *GUNS Magazine* also used to run coverage of custom guns every so

often. I don't see every issue of either magazine, but it seems to me that custom coverage has decreased, in recent years.

The annual *Gun Digest* book customarily contains a section that used to be called "Art of the Engraver" and "Art of the Gunmaker." (At least I believe those were the titles of the section.) These days, it's called "Custom and Engraved Guns," and I've had the honor of doing that section, truly a privilege, for the past decade, maybe a little longer, as my mentor in the writing business was John T. Amber, the editor of *Gun Digest* for more than 30 years. It was John's favorite part of the book.

Engraving preferences, like painting and sculpting, are subject to personal whims and taste. Some art connoisseurs are so impressed that they go into a trance when viewing the works of Vincent van Gogh, Pablo Picasso, or Joan Miró. Others snort and fume, finding their work ghastly. The old adage "different strokes for different folks" applies to engraving, just as it does to all other art forms. Fortunately, there are enough engravers around, covering just about every engraving style, to satisfy practically any taste.

An engraving job starts with the design of the pattern. Sometimes, engravers "doodle" directly on the steel until they are satisfied with the design. In other cases, they make an elaborate drawing and send it to the client for approval. One thing is for sure: If the engraver cannot draw an acceptable design on paper, they certainly cannot be expected to satisfactorily cut such a pattern into the steel.



Photos courtesy Gary Bolster

Something you don't see every day is a custom Marlin Model 1881 .45-70 rifle, complete with a set trigger. Leave it to Gary Goudy to come up with something different. Gary built the rifle and Mike Morgan engraved it. Gary has taken two deer, two antelope, and a buffalo with this rifle, and it is now retired.

Once satisfied with the design, the engraver begins to cut the pattern into the steel. They will usually do this by one of three methods. One is to use a chasing

hammer for power and guide the graver around the pattern, tapping on it with the hammer. A second method is really a variation of the first, only using a power tool, either electric or compressed air-driven, with the graver attached to the power tool. The third method is to use only a hand graver. Practically all Germanic-style engravers use the chasing hammer method. The more delicate *bulino*-style engraving relies primarily on the hand graver and muscle power, and most Italian engravers use this method. Most American engravers use a combination of methods, but also rely greatly on power tools such as the Gravermeister, AirGraver, or NgraveR.

The engraver frequently stipples the background around scrollwork, to provide a degree of depth to the pattern. Most pay scant attention to the preciseness of the stippling. In their view, it is simply a background and not a major contributor to the overall quality of the engraving. One exception to this philosophy was the artistry of Lynton McKenzie. McKenzie did his background stippling under a microscope! He insisted that each dot in the stippling process be precisely placed and exactly like all the rest in the background. This is but one reason his work is so distinctive and easily recognized.

If an engraving pattern calls for inlay work, either line inlay, animal scenes, nudes frolicking in a platinum waterfall, or whatever the heart desires, the inlay metal used to form the design, usually gold or silver, must first be permanently attached to the steel of the firearm. The engraver normally accomplishes this by undercutting the pattern in the steel. He makes an outline of the inlay and then removes the steel from the pattern. Next he undercuts the edges of the pattern, forming a dovetail in the steel, before hammering the precious metal inlay material into the area where the steel was cut away. The inlay material is considerably softer than the steel and so will flow into the undercuts, locking it in place. With the completion of that task, the engraver can then mold, sculpt, and shade the inlay into the desired form. Some engravers rely on soldering the inlay material to the steel, though I know very few who use that method.



Photo courtesy Tom Alexander

Bob Evans engraved this Martini in a Native American motif from one of the Northwest U.S. tribes. It is wonderfully done and very unusual. Bob won a FEGA award for his design work on this lovely rifle.



Photo courtesy Lee Griffiths

Lee Griffiths is about as versatile as they come. He can do heavily chiseled Germanic sculpting, as well as delicate, tiny, English-and Italian-style scrollwork and lovely bulino work! He is also a nifty sort, as who else would put high-relief battle scene on an engraving job, such as this broom handle Mauser, not to mention the roaring gold lion's head. Lee will and has. The job here speaks for itself.

Some engravers will only do one style of engraving, while others do it all. A few of the best Italian engravers will only execute the *bulino* scenes on a project and will farm out the embellishing scrollwork to others. Other engravers are very versatile in their styling, while a number are much more limited. It is up to the client to select the desired engraving style and, once that happens, to find an engraver who will best fulfill this desire.

Only one's checkbook and the calendar limit what is available. A pal of mine recently purchased a Westley Richards best quality double rifle. Although he loves English doubles, he is not particularly enamored with their typical factory engraving. He had the rifle delivered unadorned, then sent it to a favored American engraver to execute the embellishment. Perhaps 99 percent of all double rifle aficionados would be enthralled with a new Westley Richards double direct from the factory. My pal is the exception, but he got what he wanted.

We often look back on the good old days with fondness and nostalgia. A frequently heard subject of discussion when a group of gun nuts get together

focuses on the theme that “they just don’t make things like they used to.” Depending on the particular item, there is often much merit to that argument. Even so, when custom guns or engraving is the subject, this scribe has no desire to return to yesteryear. I believe that the highest quality custom firearms, as well as the most artistic and exquisite engraving in our history, are being turned out today. Even better, judging from the talents of newcomers in the business today and the quality of their work, the best is yet to come.

Stock Carving and Inlay Work

Although engraving is the primary art form used to embellish firearms of all types, there are others. One seldom seen in the U.S., but often encountered in Europe, is stock carving. Both the Germans and the Austrians are masters at this art form. I have seen everything from a small amount of delicate scrollwork carved into stock to fighting stags and charging wild boar boldly leaping from the wood. I have seen sculpted ivory and, in one case, silver inlaid into the stock for added emphasis. Such work, while generally beautifully executed, is not for me. I can certainly appreciate the talent and artistry required to perform such a job, but not on my guns. My custom rifle pal with the glitz and glitter taste would probably kill to have such work embellishing his rifles.

One of the nicest jobs I have seen recently was on a rifle owned and engraved by Marty Rabeno. Rabeno started with a restored Winchester Model 73 lever-action chambered for the .22 rimfire and executed a magnificent bulino engraving job on the rifle. He then sent it to Joe Rundell for a superbly done stock carving job. Rundell carved delicate scrollwork into the stock and, on this particular piece, it really fit with the flow of the overall gun. It bears no resemblance to a cuckoo clock!

Another embellishment used often by the Germans and Austrians is fish-scale checkering. Actually, it isn’t checkering at all, but, rather, a form of carving. I think that it looks okay on some handgun grips, but is a bit much on a rifle or shotgun. I had one rifle stocked in Germany that, in a weak moment (or

too much *Spatenbrau*), I allowed my engraver pal to do a fish-scale job instead of traditional checkering. The work was beautifully and precisely done, but just didn't jive with my taste. I found someone who loved it and traded him the rifle.

Contrasting wood inlays in a stock, generally popularized in this country by Roy Weatherby, is another form of decoration I can do without. Designed with imagination and executed with skill and precision, inlays can be attractive. I once owned a custom rifle that featured such stock inlays. At the time, I liked them very much. I have also owned a couple factory Weatherby rifles over the years that had inlays in the stock. These days, though, none of my guns are so decorated. I look upon stock inlays like I do convertible cars and home swimming pools. Everyone has to have one sometime in his or her life. One such experience, though, is usually enough. I've already had all three, thank you.

10

Custom Engravers

Firearms engraving was not a particular talent evident among the early American gun makers. While factory-engraved Colt's and Winchester firearms are highly prized and very expensive collectors' items these days, the factory engravers' names were not typical American names. Just about every gun nut has heard of the likes of L.D. Nimschke, the prolific Ulrich family, Cuno Helfricht, and Gustave Young (Americanized from the original "Jung"). These engravers were all linked to factory-engraved Colt's and Winchester guns. Later, such names as Arnold Griebel, R.J. Kornbrath, Max Bruehl, and Josef Fugger were prominent to engraving aficionados. Of course, with such family names, all were of Germanic origin.

I must say here that much of the lesser engraving coverage on both vintage Colt's and Winchester guns was pretty basic and often not all that well done, even by some of the bigger name engravers. Yet some of the more extensive patterns, those frequently found on presentation firearms, were marvelously done, and by the same artisans. I've concluded that the quality of the lesser engraving had nothing to do with a lack of talent on the part of the engraver, rather it was about how much the factory was willing to invest in a particular job. One can only get a dollar's worth of work for a dollar's pay. That's one thing that hasn't changed, with the passage of time.

For some reason, Germany and Austria have produced many fine engravers for eons and still do today. Whether they possess a special Teutonic engraving gene in their biological makeup, I can't say. What I can say with certainty is that many superb engravers carry Germanic family names. From the nineteenth

century (and perhaps before) and well into the twentieth century, most well-known engravers in the USA were of Germanic origin.

One of the first non-Germanic engravers I became aware of was E.C. “Jack” Prudhomme. A Louisiana native, Prudhomme began his engraving career in the 1940s. Besides executing wonderful engraving, Prudhomme also wrote about it. His book, *The Gun Engraving Review*, was well received and about the only book on the subject at the time. The book has been out of print for many years now and, when a copy can be found, collectors are known to go for it eagerly.

Another non-Germanic engraver who became well known was A.A. White. The Massachusetts native started his career even earlier than did Prudhomme. White devoted much of his work to Colt’s revolvers, so much so that he was often thought to be a Colt’s employee. He wasn’t, and spent most of his career as an independent craftsman. During the ’60s and early ’70s, he was the chief engraver for A.A. White Engravers, Inc., and worked for himself during all but that period.

Two engravers who plied their trade for many years were often thought to be brothers. As best I can figure, though, they were not related. Floyd Warren was a native Buckeye, born in Kinsman, Ohio, and the other, John Warren, was a New Englander, from Massachusetts. I became acquainted with both men’s work from reading the pages of *Gun Digest*. It was a rare issue of the *Digest* that didn’t showcase the artistry of one Warren or the other, and, often, both had examples of their work featured in the book.

Another engraver, James B. Meek, in addition to engraving guns and doing oil paintings, wrote a how-to book called *The Art of Engraving*. He did so, he said, because there was no such manual in print that he could find. I believe his book is still in print and has been available for years from the publisher, Brownell’s. Most of the Brownell’s catalogs up until the time he passed away were illustrated with Meek’s paintings on the cover.

These and many other engravers provided the transition from almost totally Germanic engravers to guys with names like Churchill, McKenzie, Smith,

Wallace, Evans, Rabeno, Shostle, Swartley, Welch, Viramontez, Rundell, Griffiths, Hands, and so many more.

The rest of this chapter consists of short bios of some current engravers busy at their benches around the country, along with a photo or two of their work. The list is by no means exhaustive, nor could it be in a book of this size. It is, I think, fairly representative of the quality of engraving available to the aficionado who appreciates such fine work.

John Barraclough

John Barraclough is a wonderful man and a fantastic engraver. He has done many things in his life, from being a steeplechase jockey and interior designer to avocado farming, engraving, and a teacher of engraving.

He first dabbled in engraving in 1948, but didn't get serious with it as a career until more than 30 years later, about 1980. He can do any style, but he most enjoys the American variation best of all. He also loves working on period American firearm pieces, such as early Winchesters and Colt's, and he enjoys teaching the art of engraving to motivated students at Lassen Community College, Trinidad State Junior College, and other institutions promoting such craft. Shown here is a sample of his work, a lovely 1911.



Photos courtesy Sam Welch

Paula Biesen-Malicki

Paula Biesen-Malicki was born into a gun-making family. Her grandfather Al Biesen is an icon in the trade, and her father, Roger, is well on his way to becoming one. I suppose it was ordained she be involved in some way, as well. She has now been engraving of most of 18 years, and because she is self taught, she feels her engraving style is more on the non-traditional side. She specializes in lifelike animals, which she first sculpts with the aid of a microscope, before using other engraving techniques for details and shading.



Photos courtesy Paula Biesen-Malicki

This is a Paula Biesen-Malicki engraving job on a rifle built by her father, Roger Biesen. Paula engraved the rifle with a kudu on the floorplate and featured her French grey finish on the scroll work.





A Perazzi MX-8 receiver engraved by Paula, with a rooster pheasant on the bottom of the action and featuring her French grey finish on the scroll work.

Jim Blair

Longtime FEGA member Jim Blair is a multi-talented individual. A native of the great state of Wyoming, he has lived nowhere else. Before he became an engraver, he tried many different occupations. Being from Wyoming, he naturally worked on ranches, but he also worked for the Forest Service, as an auto body shop repairman, as a painter, and as a teacher and welder in a coal mine. Then he found engraving.

He began his engraving training in 1980, attending classes at the NRA school in Trinidad, Colorado. Some of his instructors were Neil Hartliep, John Barraclough, Sam Welch, and Robert Swartley. The rest he learned on his own. He does all styles, but prefers lighter, more delicate patterns with 1 definition. He also likes the *bulino* styling. Shown are three views of the delicate engraving he prefers, here on an N.L. Heineke double gun, as well as a photo of Mr. Blair at his bench.





Photos courtesy Jim Blair

C.J. Cai

I first met C.J. Kai, when he began attending the annual FEGA exhibition a few years ago. His work on display at that first show was very impressive and, of course, it still is, but now even more so. He is flexible enough that he can engrave most anything,

Though this is a gun book, two of the most impressive items I've seen C.J. engrave were a engraver's chasing hammer and a cigar holder. I have included a photo of the cigar holder here, along with those of a lovely Browning Citori over/under shotgun.





Photos courtesy Tom Alexander

Hanns Doesel

Herr Doesel is a German engraver who studied under the late and great Erich Boessler. Hanns has been a Master Engraver for many years, now, and turns out some exquisite work. He is a multi-talented engraver, executing his creations in many different styles. I attribute this versatility, at least in part, to his studies with Erich. Erich had done a great deal of work for the American market, as well as the English trade, and was considerably more flexible in styling than the average German Master Engraver. Shown here are some samples of Herr Doesel's mastery.







Photo courtesy: Henry David

Photos courtesy Hanns Doesei

Mike Dubber

Mike Dubber's work just keeps on getting better and better. The project shown in these photos is entitled "The Greatest Generation," and it is a fitting tribute to that era. A number of artisans contributed to this project. Mike Dubber, of course, did the magnificent engraving. Katherine Plummer added her fantastic scrimshaw artistry, and her portraits of Generals Patton and MacArthur are so good, you almost expect them to start shouting orders. Larry Downing's custom knife is an exquisite pairing. It is amazing artistry in every aspect.





Photos courtesy Michael Wheatley









Bob Evans

Bob Evans has been engraving firearms for a very long time, about four decades, now. He grew up in Oklahoma, and he developed a strong interest in firearms there an early age. He enjoyed building muzzleloading rifles in his spare time, when he wasn't busy earning a living. He took up engraving when he had great difficulty finding someone to do that kind of work on his creations. He later gave up the gun making chores to concentrate exclusively on engraving. Now in his eighties, he's still actively at the engraving bench.



The rifle shown here has Dakota Traveler metalwork with an extra barrel that Gary Goudy acquired from Don Allen in a big trade. Gary stocked it for himself and sent it to Bob to be engraved. I guess once in a blue moon a gun maker does build a rifle for his own use.

Peter Ewald

Peter Ewald is another German engraver and former student of Erich Boessler. While the apprentice system so prevalent and favored in Europe has many advantages, when it comes to artistic endeavors, it also has a few disadvantages. The biggest one is that the apprentice will, by necessity, follow the styling of his instructor. The student is, in essence, aping their teacher and, if they don't, the student is not apt to do to well under that teacher. The apprentice is not given much of an opportunity to express individual creativity until after the apprenticeship is over. Erich, with tremendous experience in the American marketplace, allows considerable flexibility on the part of his students. Herr Ewald engraved this pre-'64 floorplate for an American client.



Lee Griffiths

Lee Griffith came onto the engraving scene, at least that I knew about, a few years back. I met him at a combined FEGA/ACGG exhibition in Reno, Nevada. I got a chance to have a look at his first engraving job, done on a Parker shotgun, and was floored. There is no way I could have guessed it was his first job — or fiftieth, for that matter. It was very, *very* well done.

In the intervening few years, he's gotten better and better. He is also very versatile and adventuresome. He's the only guy I know who would put gold inlaid spiders and other assorted bugs on a Perazzi shotgun — he must have a lot of fun just sitting around thinking! He is comfortable and confident doing spiders and bugs, dance-hall gals, teeny English scroll, or Italian-style *bulino* work.



Photo courtesy Sam Welch

The right-side view of the above mentioned Perazzi shotgun, complete with bugs. Think what you may about the design — my wife wouldn't let me in the house with it — it is exceptionally well done and his client loves it. That's all that matters.



Photos courtesy Lee Griffiths

A right and left side view of a .22 rimfire frame not yet finished. It is well along, though, and is going to be exquisite, when finished. When I asked how the scene developed, he told me that, since the frame is

long and narrow, it suggested the use of a train to him, which, in turn, caused the train robbery idea, then the saloon, etc. As I said, he has a lot of fun just thinking.

Barry Lee Hands

Barry Lee Hands began his engraving career and destiny, when he was professionally apprenticed as an engraver at the ripe old age of 17. Over the next three decades, he honed and polished his skills and talents, and his work is internationally recognized and in great demand today. He is a dedicated student of the art and history of engraving and has traveled extensively to visit other engravers around the globe. He has developed a proprietary technique for sculpted overlays, heavy damascene, and the inlay of gold into pearl. He has received numerous awards recognizing his talents, and he is currently serving as the president of the Firearms Engraver's Guild of America.



Photo courtesy Steven Dodd Hughes

The above rifle is a job Barry Lee Hands did for custom gun maker Lee Helgeland. Helgeland built the rifle to suit himself as his personal elk rifle, chambering it for the 9.3×64 cartridge. Barry Lee engraved it for him, using his newly developed sculpted overlay techniques. These two talents combined to make a lovely rifle.



This Hagn-action single-shot rifle won the Best Engraved Rifle Award for Barry Lee Hands at a recent FEGA exhibition. The rifle itself was put together by none other than custom gun maker icon Jerry Fisher. Beautiful engraving, beautiful rifle.



Photos courtesy Sam Welch

Roger Henrichs

Though Roger is not a native of North Dakota, he has lived in Fargo for more than 50 years. That should qualify him as a native, don't you think? He is a self-taught engraver. With the help of James B. Meek's *The Art of the Engraver* and E.C. Prudhomme's *Gun Engraving Review*, he learned how to engrave with a chase hammer, chisel, and hand-push gravers. He engraved his first gun in 1972, and did commission work on a part-time basis until 1980.

Roger next started an engineering/construction consulting business, and the time needed to make it successful left little time for engraving. As a result, he quit engraving. As his business grew and prospered and some free time became available, he then took up woodworking, instead of returning to engraving. In 2005, when he ran out of woodworking projects, he decided to return to engraving. He upgraded his studio to include a microscope and air-assist gravers. Like riding a bicycle, he picked back up on it in short order. He closed his consulting firm and now engraves full-time. This Fox Sterlingworth is one of his most recent projects. I think we should all welcome him back.





Photos courtesy Roger Henrichs

Brian Hochstrat

Brian Hochstrat is a young, up and coming engraver making a name for himself. I first met him two years ago, and he has turned out some mind-boggling stuff since then. He is doing great work in all aspects of engraving, but his inlay work is particularly notable. I predict this young man has a bright future ahead of him in the engraving world.







Photos courtesy Tom Alexander

Three views of Brian's great work on projects with Al Lofgren.



Photo courtesy Sam Welch

This very unusual combination of pistol and knife won the Best Engraved Handgun award, at the FEGA annual exhibition.

Jerry Huddleston

Jerry Huddleston grew up in Oregon. He built his first gun, a pistol, in 1952. He said it was so bad he was afraid someone would get hurt with it, so he threw it away. He sold the third gun he made, in 1964, for \$125.

Jerry is a self-taught, contemporary gun maker — self taught with the help of a lot of books, that is. When it came to developing his engraving skills, though, he was fortunate that Master Engraver Bob Evans lived and worked in his area. Huddleston relied heavily on Evans to learn his engraving skills and techniques, and he continues to study under him today. Shown are some samples photos of the work he is currently performing.





Photos courtesy Sam Welch

Weldon Lister

Weldon Lister began engraving when he was 17, studying under the watchful eye of his dad, Bill Lister. Bill Lister learned the basics of engraving from his uncle, Austin Lee Lister, and later worked with Frank Hendricks Master Engravers, Inc., in San Antonio, Texas. Needless to say, Weldon grew up around gun engraving and had the advantage working with a Master Engraver, his dad. They worked together in the same shop, side by side, for more than 26 years.

As an interesting aside for country music fans, Bill Lister, prior to his engraving career, was a recording artist for Capitol Records, was on the Grand Ole Opry, and was Hank Williams, Sr.'s opening act on the road. He was responsible for Hank's recording of *There's a Tear in My Beer*.



Photo courtesy Weldon Lister

Lister engraved this Colt Single Action with the theme of Native Americans and buffalo. Based on the western art of Frederic Remington and Charles Marion Russell, this one features an abundance of raised and flush precious metal inlays, including 24K and 14K yellow gold, 14K rose gold, and silver. It features sculpted and carved American scrollwork and a French grey finish.



Photo courtesy Weldon Lister

This is Weldon Lister's rendition of the classic Nimschke-style engraving on a Cimarron Uberti Henry rifle. I'm not much of a historian, but it sure looks authentic to me.



Photo courtesy Weldon Lister

A Colt Single Action Army Texas Ranger Commemorative, No. 88, Grade 1. Frank Hendricks started the engraving on this pistol, but it remained unfinished at his passing. Weldon completed the engraving and did the selective nickel plate/fire blue.

Marty Rabeno

Marty was born and raised in New York City, of all places for a firearms engraver. Each time I think of that fact, I am reminded of a TV ad campaign for a national brand of *picante* sauce that ran frequently for a year or two. The punch line, when speaking about its competitor, was, “That stuff’s made in New Yawk City!” I chuckle every time.

The vast majority of Marty’s work I’ve seen carried themes from the Old West, with cowboys, Native Americans, buffalo, etc., executed on period firearms. He’s known mostly for his American scrollwork and his fantastic *bulino* scenes.

His canvas for the work shown here is considerably different from his norm. It is a modern custom bolt-action African hunting rifle, crafted by Ralf Martini. Rabeno’s impeccable engraving remains as it always is, superb.





Photos courtesy Christian Kimber



Denis Reece

Denis is a California-based engraver who lives in the vicinity of Steve Heilmann. Over the past two or three years, perhaps a bit longer, these two masters of their crafts have collaborated on several projects. This extensively modified Winchester Model 63 .22 rimfire auto-loader is just such a project. Heilmann did all the metal and stock work, and Reece did the engraving and gold and platinum inlay work. For his work on this rifle, Reece won the Best Metal on Metal Inlay and Best Engraved Rifle awards, at the annual FEGA Exhibition in Reno, Nevada.





Photos courtesy Steve Helmsley

Joe Rundell

Joe Rundell is a multi-talented, multi-faceted guy. He is an engraver of enormous talent, a sculptor, a wood carver, a stock maker, and I have no idea what else he excels at. Most every time I'm around him, I learn something new that he has mastered. The Sabatti shotgun shown here, illustrates examples of some of his fantastic talents.



Photos courtesy Weier International

Several views of the action area of the Sabatti shotgun. The bottom view also provides a better view of much of the carving work that covers nearly every square inch of the stock.





Photos courtesy Sam Welch



Diane Scalese

Diane Scalese began her engraving career in the mid-'80s. She started by engraving horse bridle bits, buckles, spurs, and other western items, as she lives in Montana, where such things are in demand. Saddle silver and jewelry didn't escape her attention, either, and she and logically progressed into engraving knives and firearms. These days she's a Master Engraver in FEAGA and stays very busy engraving firearms. Her favorite style is the traditional western bright cut executed on western-style firearms, but, as the accompanying photos greatly attests, she is very versatile. The rose and scroll pattern she executed on the Hagn single-shot receiver shown here provides more than adequate testimony as to her capabilities. Historically, I believe the rose and scroll pattern originated with Purdey, in London. For those who would like to see the finished rifle, you'll find it in the Steven Dodd Hughes page of the "Custom Makers" chapter.





Photos courtesy Steven Dodd Hughes

Ron Smith

I well remember the first project I saw from Ron Smith. It was at one of my early visits to the FEGA/ACGG combined exhibition. The project blew my mind, it was so good. When told about who had done the project, my response was, “Who’s Ron Smith?” I was totally unfamiliar with him. I can remember writing in a story shortly thereafter, “I don’t know what Arizona rock I’ve been under, but” The photos here are of his latest undertaking. In addition to executing his wonderful engraving and inlay work, he also does a lot of teaching and writing on engraving.





Photos courtesy Sam Welch

Robert “Bob” Strosin

Bob Strosin has been engraving for going on just about four decades now, having started in 1978. He is a full-time engraver and is self-taught. He has, however, attended Grand Master classes taught by Winston Churchill, Ken Hunt, Philippe Grifnee, Alain Lovenberg and Creative Art. He enjoys all styles of engraving on firearms, knives, and jewelry. His favorite canvas though, if he had to name one, would be classic side-by-side shotguns. He is a past treasurer and past president of the Firearms Engravers Guild of America (FEGA).







Photos courtesy Bob Strosin

The owner of this VH-grade Parker shotgun commissioned Bob to engrave it in honor of his old German shorthair, "Gunner." Gunner was not in good health when the project started. Bob engraved a portrait of the dog on the bottom of the action, immortalizing him for as long as the shotgun exists. Shortly after the project was finished, Gunner passed away. The owner of the gun says, "Gunner will be with me in my memories and his portrait will be with me on all future hunts."

Lisa Tomlin

Back around the mid-'80s, the late Mr. Ray Diehl, a dear friend and fellow gun nut, asked if I had heard of engraver Lisa Tomlin. It pained me to admit I hadn't. He showed me some photos of work she'd done for him, and it was exquisite. I met her at an SCI convention not long after that and have kept in touch since.

Lisa has come a long way in the intervening years. In those early days, her work, at least that I saw, was pretty delicate, and much of it was *bulino*. While it was lovely, some canvases need a heavier hand. As can be seen in the accompanying photos, she can and does do both styles and in the proper amounts. These days she can boast of having done presentation pieces for kings, presidents, and prime ministers, as well as us lesser mortals. A southern belle from Virginia, she's turning out her superb work from her shop there in the Old Dominion.



*Lisa engraved this Rigby 20-bore shotgun frame for presentation to President George H.W. Bush.
Needless to say, it is exquisite.*



For several years, Lisa was the primary engraver for the John Rigby company, in Paso Robles, California. She adorned this frame for a Rigby double rifle. The gold inlay of the elephant bull is exceptional, as is the rest of the engraving.



A lovely sidelock Rigby double rifle that Lisa Tomlin engraved. Note her sculpting work on the breaking lever.



Photos courtesy Lisa Tomlin

Another Rigby double rifle, this one a .470 Nitro Express that Lisa engraved. I don't know the story behind the crocodile on the sideplate, but I don't believe I've seen another like it. One usually sees elephants, buffalo, rhinos, or other such animals, not crocs. Next time I speak with Lisa, I'll have to ask about from where the inspiration derived.

Sam Welch

Sam Welch is a fantastic engraver and one of my favorite people, as well. Early in Sam's engraving career, his neighbor was Ray Viramontez, a wonderful engraver who helped Sam along immeasurably. After that boost by Viramontez, there was no stopping him. Not only does Sam engrave guns and knives, but just about anything that provides a suitable surface. His work is impeccable and his talents endless.







These three images above are of the engraving on a Brian Harre-action custom rifle project by Paul and Sharon Dressel. The finished rifle is incredible.



Photos courtesy Sam Welch

While this book is about custom guns, and the Model A Ford pictured here is in no way a gun, a gun is involved. Sam Welch, pictured here with his “baby,” completely restored this Ford and, in doing so, engraved many parts of the vehicle. For example, and as the tie-in to this book, is the gearshift knob. It is a Sam Welch-engraved Colt’s percussion pistol!

Terry Wilcox

Terry Wilcox is another jack of all trades. He is the only living American who knew Erich Boessler longer than I did. (When I first met Erich, one of the first things he asked was if I knew Terry.) He is a retired military officer, a helicopter pilot, a wood dealer that cuts, cures, and sells gunstock blanks (many of the blanks shown in this book came from him), he's been known to make a gunstock or three himself, and has been engraving for a few years. Every so often, he disappears off to Germany for a couple years to work with one or more Master Engravers there. He collects fine custom guns, mostly of European origin, but not exclusively. He must also be a scheduling wizard to fit all his activities into a 24-hour day! He is, in addition to all that, a great guy, and we've been friends for close to 45 years now.



Photo courtesy Terry Wilcox

11

The Specialists

In a field as broad as the custom gun trade is, a few craftsmen and -women have specialized in one aspect or other in the trade. Most are certainly capable of expertly executing other facets involved in crafting the custom gun. Some, though, have become so well known, so expert, and so busy trying to keep up with the work they have, their concentration on one particular aspect or the other comes to the exclusion of the rest.

A really good example of this is Ted Blackburn. Although he is now enjoying his well-earned retirement, in his prime, Ted could do it all, but he was a particularly skilled metalsmith. In time, he started crafting custom bottom metal sets, largely for his own projects, but he made a few extras and offered them to the trade. It wasn't long until the demand for his excellent bottom metal and his equally excellent triggers for Mausers became so great, he came to devote most all his time to his previous sideline. In fact, this was so much so that it left little to devote to anything else. Swift Bullet Company eventually purchased his operation, and production of Ted Blackburn bottom metal and triggers continues there.

To distinguish these specialists and their contributions to the general betterment of the custom gun today, I have included a photo or two of some of their work. There are many others plying their trades, and this small representation is not intended to slight those not mentioned.

Space limitations and, in some cases, a lack of information or photographs of their work, has kept the list rather short. A Google search will turn up many more than are mentioned here. A good example is Jim Wisner, of Wisner's, Inc.

He is a great source of OEM parts for many firearms. All his parts are newly manufactured in his shop, not cannibalized from old guns. Wisner's, Inc., probably newly manufactures more obsolete gun parts than anyone else in the country, maybe the world.



Though Gary Goudy is a fantastic stockmaker, he also does a lot of checkering jobs on other folks' stocks. In that aspect, I'm calling him a specialist. This is his "Turpin Pattern," which originated on my Model 70 custom .458 Lott. He named it that, not me, although I like it very much.



Another Gary Goudy checkering job on a stock he made for my 1909 Argentine Mauser custom 30-06. It is a simple point pattern that is perfectly cut.



Jesse Kaufman is a checkering specialist living in South Dakota. He is also an employee of Dakota Arms. Glen Soroka built this modern clone of a Gibbs Farquharson for me. I provided the wood and Jesse checkered it.

A major task many stock makers would just as soon leave to someone else is checkering. Top-quality checkering is tedious and time consuming in its execution. Most quality stockmakers can do exquisite checkering, but not many I know enjoy doing it. In addition, not every stockmaker can cut precise checkering of the same quality by which they craft the stock itself. I have seen several stocks that were absolutely superbly crafted in every aspect except the checkering job. In those cases, the checkering, while good, was not of the same quality as the rest of the stock and, therefore, detracted from it.

Fortunately, there are a few around who specialize in nothing but checkering. A good example is Kathy Forster. She learned checkering during her employment at Kimber, back in the old days. She worked under Pat Taylor, who also does custom checkering. Both these women do excellent work; you might be surprised at how many custom stockmakers use them for their checkering. I

be surprised at how many custom stockmakers use them for their checkering. I first learned about Kathy from gun maker Frank Wells, who hated to checker and used Kathy for this task often. Kathy did a checkering job for me a few years back, and I was very happy with it.

Another craftsman specializing in checkering is Jesse Kaufman. Jesse works for Dakota Arms, but also does custom checkering from his home shop. He recently did a job on one of my rifles, and I am very pleased with the work.



Photos courtesy Terry Tremewan

This is an example of the work coming out of Doug Turnbull's operation these days. This Winchester has been completely restored to factory new condition.



Two views of a custom carving and checkering pattern on a Kevin Wigton custom rifle. Woodcarver Joe Rundell did the border carving.



Photo courtesy Doug Turnbull



Photo by Steven Dodd Hughes

Checkering as done by Steven Dodd Hughes. Steve likes relatively simple patterns that are perfectly cut, just like the one here.

One custom gun maker who seems to delight in checkering is Gary Goudy. A highlight of the annual ACGG banquet/fundraiser is the auctioning of a Goudy checkering job, which he donates each year. (I might add that his donation usually brings in some big bucks for the Guild).

A fine presentation custom gun is worthy of a fine presentation custom case. Marvin Huey began making his oak and leather trunk-type cases in 1977, and he's still going strong. Most cased presentation guns I've seen were housed in a Huey case. Relatively recently, I've learned of another artisan making splendid presentation cases of this type. He's a very talented fellow and can make most anything, including superb cases. His name is Jim Wear, and his shop is in Laramie, Wyoming.

Dave Talley is a fantastic metalsmith. For a lot of years he did metalsmithing

for many of the well-known and highly respected gun makers. These days, he's more recognized for his scope mounts than anything else. Dave is mostly retired these days, and his business, Talley Manufacturing, is in the very capable hands of his stepson, Gary Turner. A majority of the custom makers either make their own bases and use Talley rings or use complete sets of Talley bases and rings.

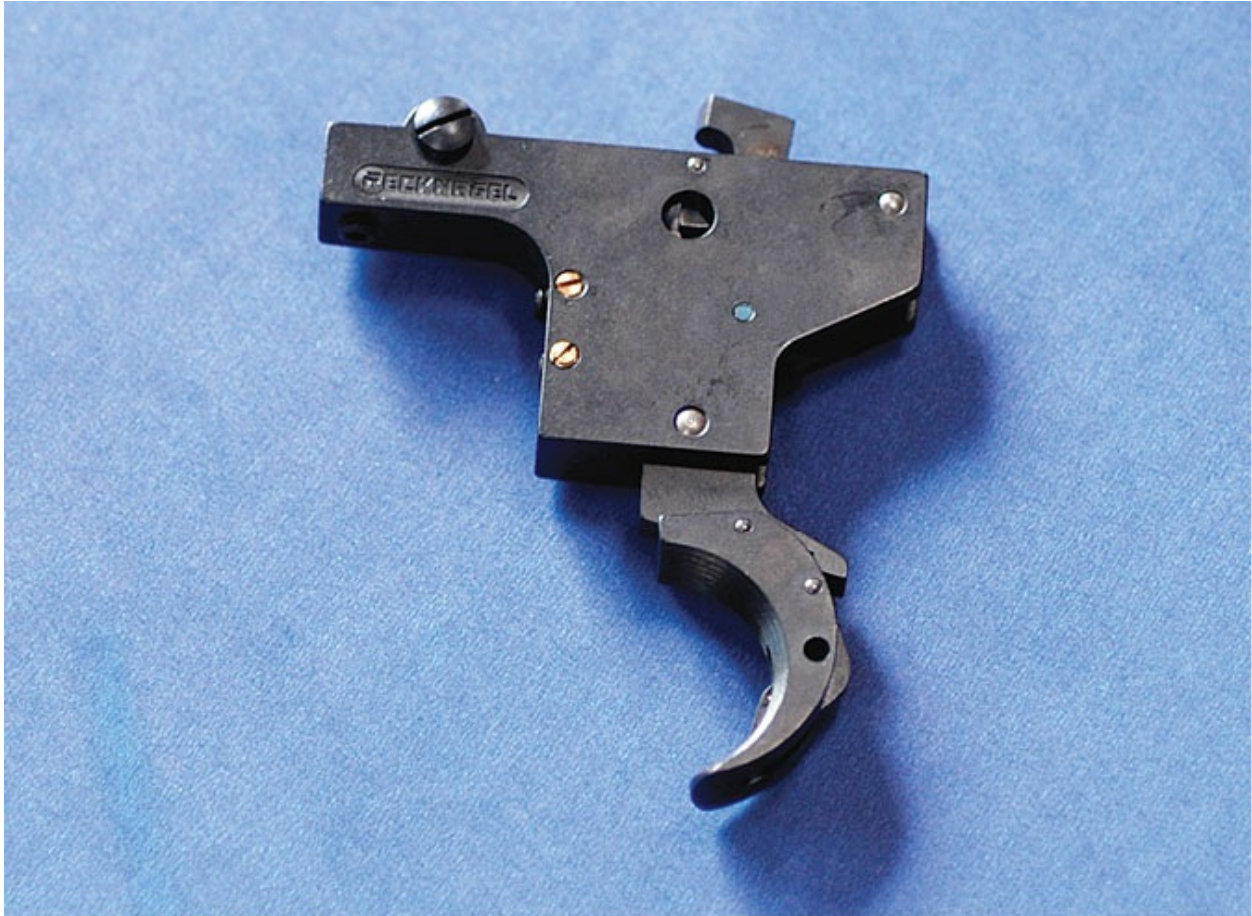


Photo courtesy James Anderson

A fleur de lis with ribbon checkering job from the shop of Glen Morovits.



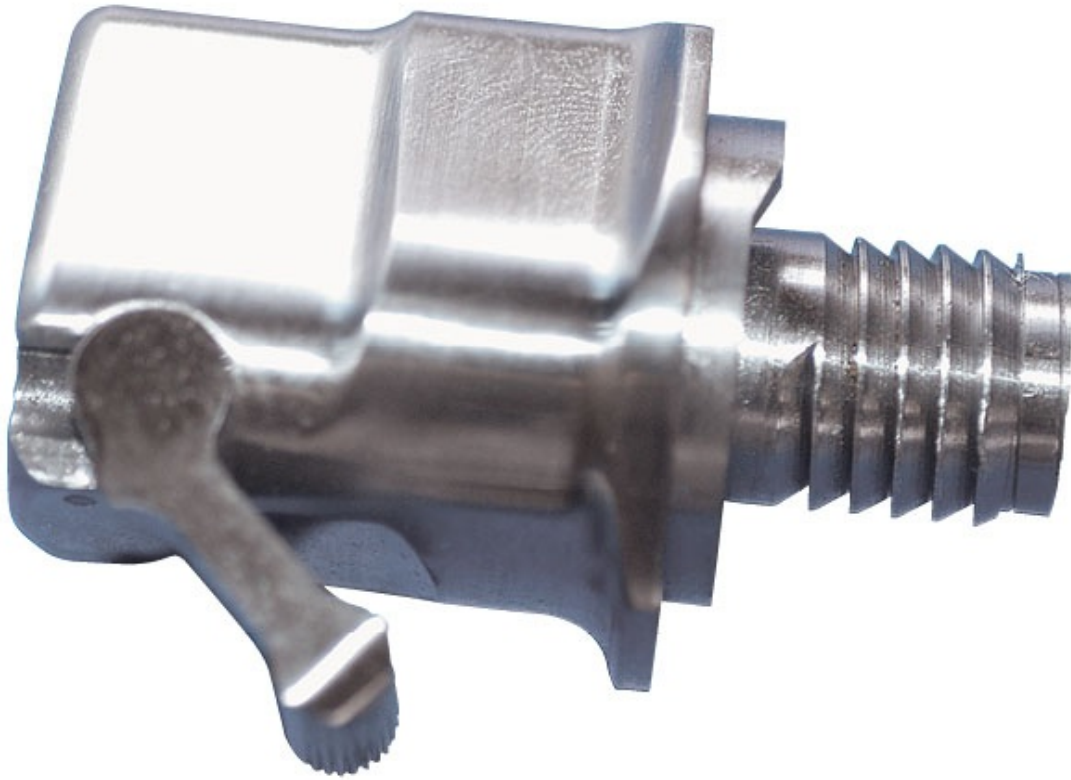
A Ted Blackburn bottom metal set for a .30-06-length Mauser action. Ted has recently retired. His custom bottom metal and Mauser trigger business with all equipment was purchased by Swift Bullet Company and moved to Kansas. Swift is now manufacturing the Blackburn items.



An excellent single set Mauser trigger made in Germany, by Recknagel, and sold in this country by New England Custom Gun.

Doug Turnbull started out working in the family business, where he learned the basics of bone charcoal color case hardening from his father. When he graduated from college, he went to work full-time in the shop. His father gave him all the color case hardening work to do, and he refined the process. Doug is able to duplicate a variety of case color styles and is noted for reproducing Parker shotgun colors. He has also learned how to prevent warpage, normally a substantial risk in case coloring work; Doug's work has virtually no warpage. Today, Turnbull offers a variety of finishing options, restoration work, and recreations.

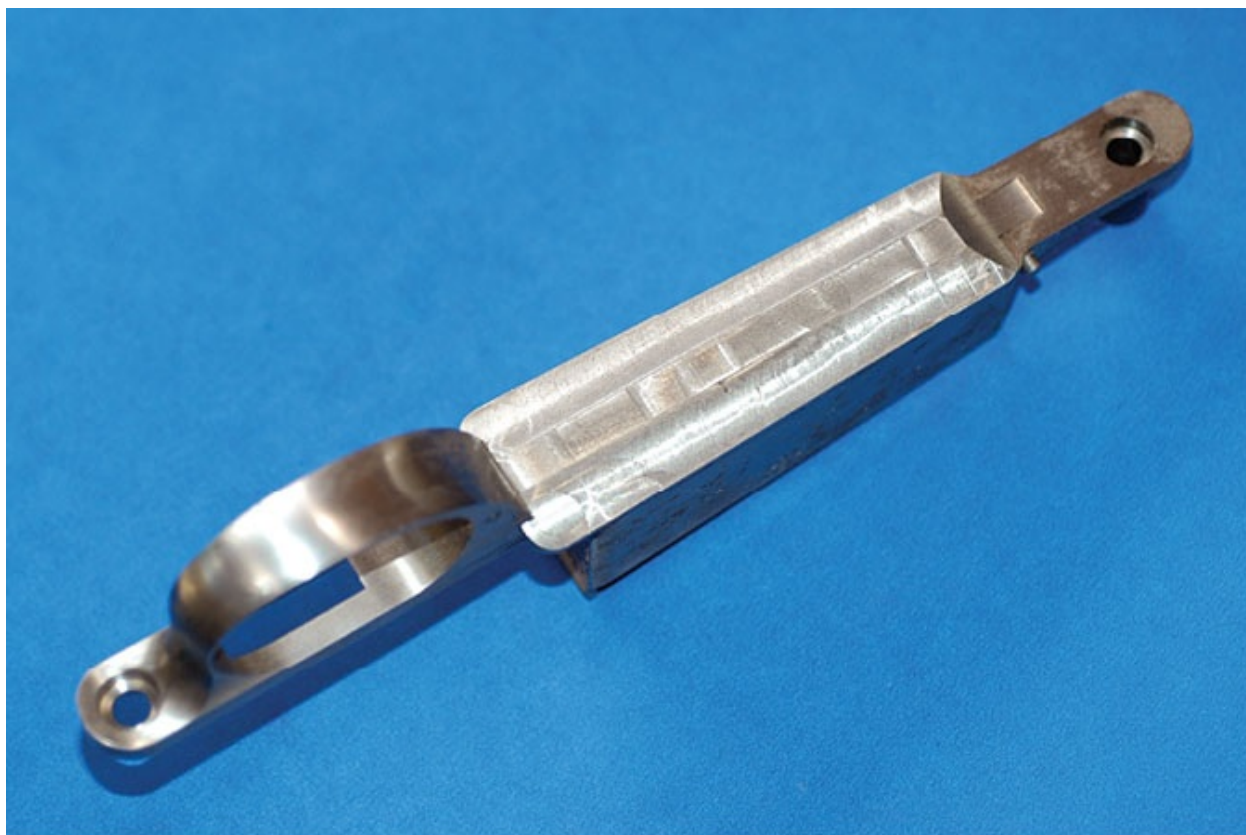
These are just a few of the specialists out there doing their thing. If a reader has a need for a specialist, the Internet is your friend. Just Google up whatever you require, and chances are you'll discover several choices. You might also ask some of the makers who they recommend. Finding them is not as difficult as you might imagine.



A Model 70-type three-position side-swing safety for a Mauser. I believe this one is from Dakota Arms and was procured from Brownells.



Timney has been making replacement triggers for a very long time. This is one of its triggers for a 98 Mauser. I got this one from Brownell's.



At one time, bottom metal sets could be ordered from Ted Blackburn with a thicker and unshaped floorplate. David Miller got a few that he used, in those days, on rifles built on Mauser actions. He would mill three flats on the floorplate that were different and attractive. I managed to talk him out of one for a project I was doing, and he three-sided it for me. Shown here, it's right off the mill, with much work still remaining to be done.





Photos courtesy Doug Turnbull



Doug Turnbull is into a lot of different things, in his New York shop. Restorations have always been a big part of his business. However, he is also into recreations, and the two revolvers shown here fit that description. One is a recreation of General Patton's famous ivory gripped Colt's single-action revolver. The other is a recreation of Teddy Roosevelt's Colt's single-action. The originals of both, of course, reside in museums.



The late Dennis Richards was an incredible checking talent. Checkering was all he did, and not only was he exceptionally good at the job, he was also extraordinarily fast. He had one other feature that made

him unusual among checkers, and that was he didn't use a cradle to hold the firearm while working. Instead, he held the gun in his lap! Anyway, when I ordered my Dakota 76 .257 Weatherby, I specified without checkering. When it arrived, I sent it to Dennis. Note the perfection of the diamonds — each one is exactly like the other.

12

The Custom Makers

For a considerable period of our history, the only way to get a new firearm was to go to one of the few gunsmiths in the country and have him build one. In that sense, all firearms were custom during that era. When the industrial revolution overtook cottage industries, guys like Oliver Winchester, Samuel Colt and, later on, Henry Ford and others, developed and refined mass production techniques. Factories then took over the production role, and customers had their choice of products rolling off the assembly line and at substantially lower prices. The custom trade didn't die out completely, but it wasn't exactly robust, either.

It remained that way through the end of World War I and a few years thereafter. Finally, though, with the availability of war surplus firearms at very low prices, demand for custom work (although I'm not so sure it was recognized as such at the time), picked up considerably. Those readily available surplus Enfields, Springfields, and Mausers had been designed for the battlefield, not for hunting, and a few independent craftsmen started businesses converting the military armament to instruments suitable for sport. Most often, this conversion consisted of replacing the stock, generally cleaning up the metalwork, and refinishing it. Sometimes the craftsmen would fit a new barrel to the military action.

Usually, other than cleaning, polishing, and refinishing, they left the action alone. Sometimes, they modified or replaced the military two-stage trigger and, if one of the new-fangled scopes then gaining popularity was the customer's

sight of choice, they had to also modify the safety, and often the bolt handle, as well. Needless to say, they had to drill and tap the action to mount the scope. On occasion, the 'smith might even modify the magazine box and trigger guard to a more pleasing shape.

Between the great wars, bolt-action rifles made substantial inroads into the popularity of the lever-action rifle for hunting. Remington introduced a sporting rifle based on the Military Model 1917 Enfield, in the early 1920s. Savage brought out a bolt-action sporter in the early 1920s, as well. Winchester followed suit with the predecessor to what would become an industry standard, in 1925. Later, Winchester did some modifying and tweaking to The Model 54 High Power Sporter and reintroduced it, in 1936, as the Model 70. As they say around the campus, the rest is history.

About the same time as our industry was picking up on the gaining popularity of the bolt-action rifle, a few custom houses opened their doors for business. Hoffman Arms, Griffin & Howe, Niedner Arms (with its best craftsman Tom Shelhamer), R.F. Sedgley, and August Pachmayr (father of Frank), began producing functional and handsome rifles. Some independent craftsmen such as Bob Owen, Alvin Linden, Adolph Minar, and Fred Adolph, among others, went about the business of turning out custom rifle stocks that were vast improvements, both in function and in looks, to factory or surplus stocks.



The fledgling industry came pretty much to a screeching standstill with the outbreak of World War II. After that Great War, though, even more surplus rifles were available, and the industry, once again, resumed transforming readily available and inexpensive military rifles into more usable hunting guns. As with the earlier effort, most of the conversions were relatively minor and were far more functionally oriented than cosmetic. Even so, there were a few craftsmen who apparently decided life was too short to hunt with an ugly gun. They not only modified surplus rifles to function better, they also began turning them into very attractive guns.

Thanks in no small measure to the outdoor press at the time, some of these small firms and independent craftsmen started attracting the attention of shooters and hunters. Writers Col. Townsend Whelen and Jack O'Connor immediately come to mind. Both howled as if they had been poisoned by the inadequacy of military and factory stocks of the day. Both praised the efforts of the independent craftsmen in the business of improving the design and craftsmanship of stocks.

Some of the early makers were Monty Kennedy, Lenard Brownell, Leonard Mews, Hal Hartley, Keith Stegall, Gale and Skip Bartlett, Dale Goens, and Al Biesen. Alas, all these wonderful craftsmen are now deceased, save one. Al Biesen is now in his nineties and hasn't made a rifle in a few years, but his shop is more than adequately represented by his talented son Roger and his granddaughter, engraver Paula Biesen-Malicki.

Most of these fine artisans were stockmakers, but, in that period of custom gun infancy and adolescence, the shooting public paid scant attention to metalwork. Over the years, that mentality has changed somewhat. I don't believe that precise metalwork gets the credit it deserves, even today, but it does receive far more attention than it has in the past. I believe that precise metalwork is every bit as important as the stock and in many ways more so, and a very talented group of craftsmen have started specializing in this phase of the custom

gun cratting process.

What follows is a partial listing of custom gun makers active in the business, along with a short bio of each and photo examples of each custom maker's work. There are many, many more in the trade, but a complete listing is impossible in a book this length. No slight is intended to those artisans not included in the list, nor does the list represent an endorsement by the author. I do believe that the work shown is representative of the quality available today.

Reeve Abraben

There are quite a number of very talented gun makers out there who, for whatever reasons, have chosen to make their primary living doing something else, subjugating their gun making to a part-time or hobby basis. The motivation is usually the safety net provided by a regular paycheck and/or the ability to earn a more comfortable living with far less risk; I know few gun makers who earn as much as a good plumber or electrician.

One very talented maker I know well is young, raising a family, and has a very good job with a steady paycheck. He has several kids who are into all kinds of time-consuming and expensive things, and he is very busy earning a good living and being a devoted father. He does a few gun projects as time permits, but on no one's schedule but his own. His plan is to go into gun making full-time when he has retired and his kids are own their own. It's difficult to successfully argue with that logic.

Reeve Abraben is another such gun maker. He attended the Colorado School of Trades gunsmithing program right out of high school. (One of his classmates in the program was Sterling Davenport, who went on to become a well-known custom gun maker in Tucson, Arizona.) When Reeve completed the gunsmithing program, he returned home to Florida and worked in several gun shops, performing general repair until he realized that despite it being a lot of

fun, gunsmithing was no way to earn a living. He enrolled in college and found his way into dental school. Today, Reeve is a very successful dentist, but he's never lost the gun making bug. He has done quite a number of projects and continues to do so. Shown are a couple Mausers, a couple Sakos, and a pre-'64 Model 70 that he's done over the past few years. Perhaps Dr. Abraben will take up the trade full-time after his dentistry career. He is well equipped to do so, if that is what he decides to do.



Photos both pages courtesy Reeve Abraben.

James Anderson

James Anderson is one of my favorite custom gun makers, even though he has never made a rifle for me. I first met him a number of years ago, when he was working for Dakota Arms. I'd been invited up to Sturgis on a prairie dog shoot. I teamed up with Stuart Satterlee, then a Dakota employee, and James, and off we went. We had a grand time.

After that, Dakota went through a number of trials and tribulations, with the sale of the company, the death of founder Don Allen, and an incoming new owner I didn't exactly hit it off with. During that time, I lost track of James.

After a few years, photos of superb work started showing up on a couple outdoor websites I follow. The name attached to them was James Anderson, but it didn't ring a bell with me. It wasn't until we met face to face at a Guild exhibition that I managed to put two and two together.

James is out on his own these days and doing absolutely superlative work. He is still a young man, with a lot of years in front of him, and he has what it takes to rise to the top. I believe he will.



Here are the photos of a recently completed project starting with a Ruger No. 1 single-shot action. James first trued all surfaces of the action, which required a fair amount of work — nothing was square or true with the factory action. I've seen a fair number of custom Ruger No. 1s, and this one is as good as it gets. Wish it was mine.



Photos both pages courtesy James Anderson

This rifle is the one that first brought James to my attention. It is a mini-Mauser that Shane Thompson did the metalwork on and for which James crafted the stock. It is, in a word, simply grand.



Steven Bertram

I don't believe I've had the pleasure of meeting Steven Bertram, whose company, Bertram & Co. Ltd., is located in Boulder, Colorado. He is a youngster, at 42 years old, and has been working as a full-time gunsmith since 2003. He is an avid hunter and has been his entire life, and he is also a dog guy, with Springer spaniels. With those three things, how can he not be a great guy?

The rifle pictured here had its beginnings high on a ridge in New Zealand a number of years ago. Steven was after a free-range fallow deer, but the weather wasn't cooperating, giving plenty of time to talk. His guide, David Musgrave, was admiring Steven's rifle, which he'd had built back in gunsmithing school. They spoke about Steven building him a gun of heavier caliber for his work in guiding hunters for Asian water buffalo, in Australia. To condense a very long story, Steven got his fallow, along with a fine stag.

Later on, Steven was deciding on what to build to submit to the ACGG, in hopes of being admitted to full member status, when he received a call from David, reminding him of his need for a buffalo rifle. That started the ball rolling. The result is shown here.

Steven started with a 1953 vintage commercial Mauser chambered for the .300 H&H. He blue-printed the action, replaced the factory bolt handle with an Oberndorf-style straight bolt, and added Blackburn bottom metal and trigger to replace the factory items. He

replaced the factory safety with a three-position Model 70-style piece, then extended the top tang using a Reto Buehler blank. He fitted and chambered a Krieger barrel and added a quarter-rib with open sights. Steve wasn't set up at the time to mill his own quarter-rib, so he ordered a blank from Ralf Martini.

Once the metal was done, he acquired an English walnut blank, grown in Australia, from Jim Bisio, and stocked the rifle in the English style. He had Charles Lee provide the lettering and border engraving, which completed the project. Now we have to wait for the yarn about David shooting a charging water buffalo with it!





Photos courtesy Manito Lara



Roger Biesen

Roger spent 15 years as a machinist, before choosing to join his father, Al Biesen, crafting fine custom guns full-time. When Roger first joined his dad, he took over the manufacturing of the grip caps and buttplates that the Biesen shop sold to the trade. Over time, Al taught his son all the aspects of crafting fine custom guns. Roger has been building custom firearms for more than three decades, now.



Roger began this project with a G33/40 Mauser action and a stick of really fine French walnut. He barreled the action with a Biesen-style 22-inch featherweight barrel and chambered it for the 7×57 cartridge, one of Jack and Eleanor O'Connor's favorite cartridges. It was fitting that he checkered the rifle with O'Connor's favored fleur de lis checkering pattern. All work on this rifle done by Roger Biesen.





Photos courtesy Paula Biesen-Malicki

Roger built this rifle from the ground up as a heavier rifle, one chambered for the .375 H&H cartridge, another O'Connor favorite. It features a Winchester Model 70 action and a stock crafted from a very nice stick of European Circassian walnut. He checkered the stock with a variation of the Jack O'Connor fleur de lis pattern. Roger did all work on this rifle, with the exception of the engraving. His daughter Paula Biesen-Malicki did that work.

Steve Billeb

From a very early age, Steve Billeb has been fascinated with the great outdoors and the animals that live there. As a result of that preoccupation, he completed Bachelor's and Master's degrees in zoology at San Francisco State University, and also did additional graduate work at both Penn State and Montana State. His gun making grew out of his love of the outdoors and related hobbies. He started building guns professionally, in 1974, and did so full-time from 1979 to 1990. He joined the teaching staff of Southeastern Community College, in Iowa, in 1990, and oversaw the evolution of its gunsmithing program, emphasizing custom firearms.

While primarily known as a stockmaker, Steve also does much of the metalwork on his projects. He specializes in lightweight sporters and double guns. He helped to found the American Custom Gunmakers Guild, in 1983, and has served in various management positions in that organization over the years. These days, Steve is enjoying and working in the Cody, Wyoming, area.

As an example of his work, shown here are two views of a very nice .280 Remington Mauser sporter. He started with a 1909 Argentine Mauser 98 action and a Douglas 7mm barrel. He fitted a set of Blackburn bottom metal and made the stock from a very good stick of English walnut. He fitted an ebony fore-end tip with widow's peak,

fashioned pedestal swivel bases, and checkered the stock 24 lines per inch in a *fleur de lis* pattern that completely wraps around the fore-end and grip. It is a beautiful rifle from an excellent maker.



Photos courtesy Tom Alexander



Jim Bisio

Jim began amateur stock making in the mid-'70s, while a lieutenant in the U.S. Air Force. Growing up in southwest Colorado, he learned early that rifles were useful tools, and that good-looking ones had even more appeal. He told me, "I started with a lot of desire, some time on my hands, little money, lots of *Gun Digest* custom rifle photos, and a semi-inlet Sako stock."

His first three attempts were all fairly successful, and all were early Sako bolt rifle for his own use. However, as a result, he soon had friends after him to stock their rifles. He did sell a few, but most were for friends and personal projects.

After finishing his military career, in 1995, he started Heritage Walnut, sawing and curing English walnut blanks for the trade, as well as providing semi-inlet stocks to other makers. As his stockmaking skills and confidence grew, he applied to the ACGG for membership as a stockmaker, in 2009. He was admitted, in January 2010



Above a pre-'64 Model 70 stocked in a knockout stick of English walnut by Jim Bisio. Jim did all the stock work, as well as cutting and curing that lovely piece of wood. I first met Jim when I passed by his table at the ACGG show and saw a stick of walnut that I simply couldn't live without. He blew my budget for the year (and that was in January), but I ended up with a really superb stick of English.



Photos courtesy Jeff Wong

Here is another pre-'64 Winchester Model 70 from the Bisio shop. This one is a .300 H&H Magnum. Again, Jim did all stock work, as well as cutting and curing the English blank. This one also has a leather covered recoil pad.

John Bolliger

John Bolliger began making custom rifles almost a half-century ago, in Pocatello, Idaho. In 1982, he founded Mountain Riflery, Inc., and it's still going strong. From its inception, John and, more recently, John Jr., have dedicated their lives to the creation of fine custom rifles, utilizing the finest components and specializing in obtaining the very best walnut from cutters around the world. These rifles are recognized as some of the finest rifles being produced today.

John Junior is now the driving force behind Mountain Riflery, Inc., and the father and son duo continue to create these record-setting rifles. They are highly coveted; found throughout the hunting world, they are aggressively collected.



The rifle shown here is the first in the new Bolliger Legacy Series of rifles. It is crafted around a Winchester Model 70 Classic left-hand action and features a Krieger cut-rifled barrel with a full-length rib and quarter-rib, front sling swivel, and front sight ramp, all integral to the barrel. It also features extended tangs top and bottom and a Bolliger custom trap grip cap. Bolliger stocked the rifle with a stick of exhibition grade Turkish walnut, adding a custom fleur de lis pattern and checkering at 26 lines per inch. Mike Dubber executed the fabulous engraving.



Photos courtesy Eric Gordon





Kent Bowerly

I'm going to pretty much duplicate for Kent Bowerly what you'll see I wrote in a few more pages about Keith Heppler. Kent is also somewhere in his mid-eighties and is mostly, if not totally, retired from gun making. I haven't seen him for a few years, either. But both he and Keith have paid their dues several times over, and no book on custom guns would be complete without mentioning them. I came across some photos of a lovely custom Model 70 Classic that is typical Kent Bowerly. He sent them to me a couple years or more ago for something, most likely for *Gun Digest*. Anyway, I have almost no details on the rifle, nor do I know who the photographer was. I believe that Bob Evans engraved the rifle, but I'm not 100-percent certain. It is a lovely rifle.





Reto Buehler

Reto Buehler was born and raised in Switzerland. In 1988, at the ripe old age of 16, he began a four-year apprenticeship program as a general gunsmith with a gun company there. The general gunsmithing program included metalworking, parts making, restorations, and stockmaking. He completed his apprenticeship, with honors, in 1992. Reto continued work for the same company for an additional three years, then moved to Canada, working for a sporting goods store there. He then moved to the U.S. and spent eight years working for three different companies as a stockmaker, an actioner, and in a custom shop. In 2005, he established Buehler Custom Sporting Arms and hasn't looked back. With the exception of rust bluing and engraving, Reto does all metal and woodwork in-house.



This rifle is somewhat unusual coming from the Buehler shop, as it began as a Ruger No. 1. While he does build a fair number of single-shot rifles, this is the first Ruger I've seen from him. He completely altered and rebuilt the action to include adding a set trigger and a leaf mainspring. He also custom made the scope mounts, rib, and barrel-band accessories. He then crafted the stock from a really snazzy stick of Turkish walnut. The rifle is chambered for the .257 Weatherby cartridge. All work by Reto Buehler.



Photos courtesy Tom Alexander

This H&H-style rifle below is built around a left-hand Granite Mountain Arms action and a custom contour Pac-Nor barrel. Reto crafted the stock from a super stick of Turkish walnut. It is chambered for the .416 Rigby cartridge.

James Corpe

Jim Corpe has been making fine custom stocks for more than 38 years, now. When I first met him, he was living in my home state of Kentucky, but he relocated to Missouri more than 20 years ago. He doesn't make a lot of stocks these days, but, when he does, they are outstanding.

Shown here are two Miller-DeHaas single-shot rifles that Corpe stocked for a client, though 10 years apart. They are stocked in the style of John Oberlie, of Dayton, Ohio, as the client has a wonderful collection of Oberlie-styled rifles. Corpe is versatile enough that he can stock anything, but prefers to work with single-shot and bolt-action sporters.

Both rifles are shown as a pair for comparison, below, with the newer of the rifles on the top. Both have Krieger barrels installed and chambered by Mark Penrod, who also made and installed the scope blocks. The newer rifle is chambered for the .22 Hornet cartridge, the older one for the .30-40 Krag.



Ray Viramontez engraved the older rifle, at left, which was finished by Don Klein and stocked by James Corpe.



Photos courtesy Portraits by Mendy



Tim George engraved the newer of the two rifles, in the top photo and the top of the two paired together, which were finished by Pete Mazur and, of course, stocked by James Corpe.

Paul and Sharon Dressel

The duo of Paul and Sharon Dressel are a team in life and business. Both are gun makers. They also have been marketing fine gunstock blank for many years, as well as other small parts, such as grip caps. Paul met Kiwi Brian Harre a few years back, who was, at the time, manufacturing a really nice bolt-action in two or three different lengths, including a .222. Only three of these actions of that length were ever made — at least up until now. Paul showed the action to a client who immediately wanted to build a .222 Remington top-end custom rifle. Paul sent the rifle to James Anderson to do much of the metalwork, including fitting, chambering, and profiling a Danny Pedersen cut rifled barrel to a half-round/half-octagon contour. Anderson also changed out the bolt handle from the Model 70 style from Harre to a Mauser style. One of the features of the Harre action was that each had integral scope mount bases machined into the action. Anderson did a bit of shape alteration to the bases and changed them to accept Talley rings.

Paul crafted the splendid stock from a blank of Turkish walnut with tiger fiddleback figure from end to end. He checkered the stock in a point pattern with mullered borders 24 lines per inch. Sam Welch executed the wonderful engraving job, and Sandy McDonald did the slow rust blue.





Photos courtesy Matthew Peake



D'Arcy Echols

D'Arcy Echols began his gun making career as a one-man shop doing stockmaking, rust bluing, and stock duplication, back in 1980. After a couple years, out of sheer necessity, he began doing his own metalwork, as well. He told me that his intention, when he'd begun his career, was to produce a quality firearm to the absolute best of his ability. That goal has never changed.

Echols is an avid hunter and has done a good bit of professional guiding. He believes his time in the field has been every bit as beneficial to his education and career as any time spent with a chisel or file in his hands. Finally, he told me that, after 30 years in the profession, one point has been driven home to him time and time again: If you desire a rifle that will withstand a lifetime of use, consistently performing as designed and is as accurate as it is elegant, simplicity rules.

D'Arcy is joined in D'Arcy Echols & Co. by a young man who's doing fantastic work. Brian Bingham is an integral part of the company. He grew up on a small ranch in Montana. After receiving his degree in Business Management from Montana State, he and his wife returned to work the family ranch for the next 10 years. After that, though, he decided to pursue a career as a custom rifle maker. He consulted with many of the top craftsmen in the trade and enrolled in the gunsmithing program at Trinidad State Junior College, in 2005. A

summer internship with D'Arcy Echols & Co. led to a full-time position with the company, in 2006. Brian is also an avid hunter and has guided mule deer and antelope hunts since 1999.



Three views of a fantastic D'Arcy Echols .505 Gibbs rifle. It was made using a Hartmann & Weiss Magnum 98 action. Echols replaced the H&W safety with a Rabourn three-position version and replaced the H&W magazine assembly, follower, and bolt stop with those designed in-house by the Echols shop. The rifle holds three rounds in the magazine and one in the chamber. Echols made the iron sights and contoured and chambered the Krieger barrel.



Photos courtesy Kevin Dilley

The stock blank is a slab-sawed blank of California English that is very dense and hard as a brick. Echols checkered the stock at 20 lines per inch to aid the shooter in their grip during recoil — the .505 Gibbs is not exactly mild in that department. This rifle has, to date, accounted for one bull elephant and is going back for another before this book is published. The finished rifle, loaded, weights 10 pounds, 11 ounces.

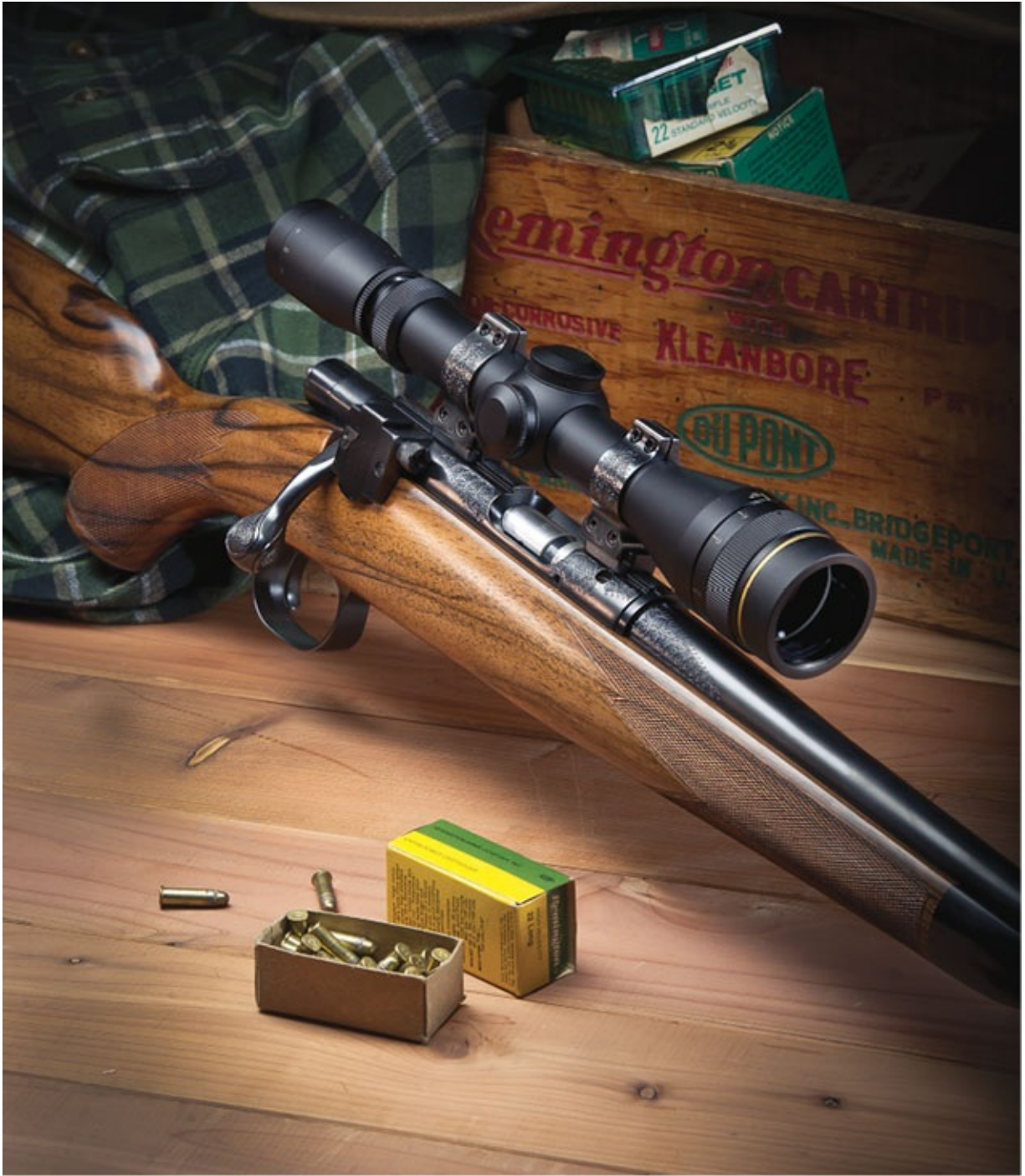
Glenn Fewless

Glenn Fewless is best known for his superlative metalwork on single-shot rifles. Most of his work that I've seen was devoted to elegant single-shots, either restored originals or newly fabricated versions patterned after originals. His work shown here, however, is a departure from his norm. It started as an Anschütz, and I believe the Model was a 1710. Glenn worked over all the metal and made some custom bases for Talley rings. He also installed a Lyman 48 rear sight. Doug Mann, a terrific stockmaker who frequently partners with Glenn on projects, crafted the elegant stock, and Bob Strosin executed the marvelous engraving. A nicer Anschütz than this one will be very difficult, if not impossible, to find.



Photos courtesy Matthew Peake





Jerry Fisher

If there is an icon in the custom gun making trade, it has to be Jerry Fisher. I first learned of Jerry in Monty Kennedy's book, *Checkering and Carving of Gunstocks*. First published in 1952, a second edition followed, in 1962. That book has been in print more than 60 years, now, and it is a rare gun maker who doesn't have a copy near his bench. I'm not sure if Jerry was mentioned in the original 1952 edition, as I've not seen a copy, but he certainly is in the 1962 volume. Jerry is now in his eighties and still turning out his masterpieces from his Bigfork, Montana, shop. If any of his gun making skills have been diminished by age, I can't tell it.

Alas, I don't have a very good photograph showing a recent rifle that Jerry has crafted. The one shown is recent enough, it just doesn't show much of the rifle. Take it from me, I've seen the rifle and found nothing less than perfection. Jerry Fisher is a true master custom gun maker. The rifle shown is a Hartmann & Weiss system Hagn single-shot, and Barry Lee Hands did the magnificent engraving.



Photo courtesy Sam Welch

Gary Goudy

Gary Goudy was born in California, and raised on a ranch in the northern part of the state. As a youngster, he contributed to the family larder by supplying the family table with venison, wild geese, or other game. Guns and hunting were a natural part of his life. They still are today.

He began stocking guns at a relatively early age, and had the good fortune to meet Joe Oakley, in Sacramento, where he was living at the time. Joe was a big dealer in gun stock blanks and knew most of the custom stockmakers of that era. He also has a nice collection of custom rifles, with examples in his collection of most of the well-known stockmakers. He showed Goudy rifles by Shelhamer, Owen, Fisher, Goens, Biesen, and others. Goudy had never seen such quality work before and was awestruck by it, but, more than anything, the Oakley experience showed him that he had a long way to go with his work. He decided, then and there, to devote whatever it took to learn the craft.

Gary credits Oakley's help and constructive criticism for much of this success. Added to that, he built a stock for *Outdoor Life* Shooting Editor Jim Carmichel, who wrote a story about it. The story came out in 1975, and Gary's been up to his ears in stock work ever since.



It's pretty rare that a gun maker takes the time to build something for himself, but Gary did just that. He made a big trade with the late Don Allen of Dakota Arms. As a part of the trade, he received a Dakota 76 Traveler barreled action with a spare interchangeable barrel. He wanted the gun as a worldwide-capable hunting rifle, so chose one barrel chambered for the .375 Dakota and the other in 7mm Dakota. The action and barrels languished around his shop for several years, other jobs getting ahead of his own time and again. He finally took the bull by the horns and finished the rifle. It is a beauty. Before calling it finished, he sent it off to Bob Evans for a nice engraving job. It is a lovely rifle and extremely accurate, with both barrels grouping under .5-MOA.



Goudy has crafted several fine custom stocks for the author, including this latest one, finished in 2012. The action is a 1909 Argentine Mauser, and Danny Pedersen did the cut-rifled barrel. Danny also sent the action up to Salt Lake City to be heat-treated, at the author's request. Roger Ferrell did the metalwork, with some added tweaking by Curt Crum. Gary crafted the stock with a stick of English walnut provided by the author. He checkered it in a point pattern at 24 lines per inch. It is exceptionally accurate, and chambered for the .30-06, it's about as all around useful as one can get. I wouldn't hesitate to take it after anything in North America and 90 percent of African game.

Steve Heilmann

Steve Heilmann is a master at both metalwork and stockmaking. There is none better at either craft. This rifle is representative of the best quality work coming out of the Heilmann shop these days.

The original designer of the .500 Jeffery cartridge developed it to work in a standard-length Mauser 98 action (considerably altered). Heilmann chose a pristine 1909 Argentine action to use on this project. He added a rear square bridge, extended tangs top and bottom, and a new sculpted bolt handle, and then trued stone polished all surfaces.

The barrel started as a two-inch diameter cylinder, from which Steve removed everything that didn't look like a barrel before crafting a quarter-rib, front sight ramp, front sling swivel stud, and an extra recoil lug on the bottom of the barrel. He crafted the stock from a stick of California English and checkered it in a point pattern at 24 lines per inch. He added a Silvers recoil pad and ebony fore-end tip. Denis Reece did the magnificent engraving, Pete Mazur did the bluing, and Doug Turnbull did the case coloring.







Photos courtesy Mustafa Bilal

Lee Helgeland

Lee Helgeland is one of my favorite people, as well as a favored gun maker. Personality wise, he is seemingly always in a good mood and simply fun to be around. As a gun maker, he is innovative, precise, and not afraid to try something new.

He likes trim classic lines on his rifles. The rifle here is one he built for himself as his Montana elk rifle. His first decision, before starting on the rifle, was the caliber. He settled on one of his all-time favorites, the 9.3×64 Brenneke. It has ballistics similar to the .375 H&H, but without a belt, and it will fit in a standard-length action, such as the 09 Argentine he chose to use on this project. Lee installed a Half Moon barrel with a finished length of 22 inches. Then he fabricated square bridges on the action and fitted some restyled, vintage Redfield rings; the system is similar to the Talley system. He fitted a Jerry Fisher trap grip cap, which holds a small wrench for detaching the scope, and also the graceful Jerry Fisher round bottom metal. He added an ebony fore-end tip with widow's peak and made a quarter-rib from bar stock. He then added something I've never seen before, a curved, leather-covered recoil pad. The rifle was next given to Barry Lee Hands for his lovely engraving. The finished rifle is magnificent and, according to Lee, shoots as good as it looks.



Photos courtesy Steven Dodd Hughes





Keith Heppler

I haven't seen Keith Heppler for a couple years now. I believe he has pretty much retired from custom gun making. Somewhere in his mid-eighties, he has certainly earned his time away from the bench. I came across some photos of a lovely single-shot rifle he did sometime back, and it was just too good not to put in this second edition. It is built on a Hagn action, but I have no other details on the rifle. I would guess that Doug Turnbull most likely did the lovely case coloring, and Keith, of course, crafted the stock with what looks to be a very nice stick of California English. I do not know who did the metalwork. I apologize to the craftsman who did it, for not giving credit where credit is due.







Photos courtesy Tom Alexander

Pat Holehan

I first met Pat Holehan 20 or more years ago. At the time, he was working for custom maker Frank Wells, in Frank's Tucson shop. I spent a good bit of time in the shop, so got to know Pat pretty well. Frank and Pat turned out quite a few rifles. Their association culminated in the building of a presentation rifle to be auctioned at the Safari Club International annual Hunter's Convention. Both Frank and Pat poured their hearts and souls into that project. In the end, while the rifle sold for six figures, it did so only barely. Frank had been led to believe that it would fetch considerably more than it had, and he got out of the custom gun business not long after that. Pat went out on his own and has been doing well ever since. Pat also has an outfitting and guiding business, and he builds mostly working hunting rifles. Shown are a couple of his models, a Lightweight Classic Hunter (below) and a Long Range Hunter.







Photos courtesy Pat Holehan

Steven Dodd Hughes

Steven Dodd Hughes began his professional custom gun making career, in 1975, when he attended Trinidad State Junior College in Trinidad, Colorado. He completed his A.A.S. degree in gunsmithing, in 1977, and a certificate of gun repair, in 1978.

Steven worked for Green River Forge, in Springfield, Oregon, from 1978 until 1980, creating semi-custom muzzleloading guns and rifles. In 1980, Steven opened his own workshop in Eugene, Oregon, doing general gunsmithing and building custom muzzleloading guns. In the late 1980s, he began crafting custom double shotguns and breechloading rifles. In 1995, Hughes moved his custom gun workshop to Livingston, Montana, where it continues today.

In addition to his extraordinary custom gun work, Hughes is also a fine writer and great photographer, with hundreds of magazine articles in print and three books to his credit. He did a number of the photos in this book. He has been a member of the ACGG since 1985, and a Life Member since 2009. Hughes currently completes just a few custom single-shot and lever-action rifles and double shotguns per year. Smith & Wesson revolvers have been his hobby since the 1970s. Hughes has always hunted with and recreationally shot custom guns crafted at his workbench. The single-shot Hagn action .280 shown here is typical of his work. Clean lines and flawless execution best describes his creations.





Photos courtesy Steven Dodd Hughes

Jim Kobe

I harass Jim Kobe at every opportunity, as he is a Minnesotan, with winter temperatures that make all the brass monkeys dress in mink coats. I live in southeastern Arizona, where it's a pretty rare day we can't play golf during the winter. I think Jim's half polar bear, as he thrives on deep-freeze temps.

Anyway, Jim is an excellent gun maker, and the example shown here is characteristic of his work. It is also a bit unusual, in that one rarely sees a custom 1903 Springfield these days. This one features a Shilen barrel chambered for the excellent .25-06 cartridge. Jim fitted a three-position Model 70-type safety from Ed LaPour. He custom made scope mount bases to fit Talley rings and crafted the stock from a stick of English walnut that he fit with an ebony fore-end tip with a widow's peak. He then added a Neidner steel buttplate and a skeleton grip cap. He checkered the stock 22 lines per inch in a full-wrap *fleur de lis* pattern. He finished the job by having the scope rings, bases, and bolt stop/magazine cutoff all color case hardened.



Photos courtesy Jim Kobe

Craig Libhart

Craig Libhart had always had an interest in guns and shooting and, after high school, he left his native Pennsylvania, heading west to Trinidad State Junior College and its renowned gunsmithing program. He graduated, in 1973, and moved back to Pennsylvania. Like so many talented gun makers, he took a job as a machinist to support his family and did little in the way of gun-related activities during the next quarter-century.

His long dormant interest in his junior college education at Trinidad was rekindled by a visit to an ACGG show, in Reno, Nevada. After that, he took some summer NRA classes at Trinidad, taught by Mark Stratton and Steven Dodd Hughes. These classes served to further whet his appetite, so much so that, in 2002, he moved to a part-time status at the machine shop and began making custom gun stocks out of his home shop. He was accepted into the ACGG as a stockmaker in 2004, and became a full-time gun maker in 2008. He does mostly two-piece stocking projects, but the occasional bolt-action one-piece job finds its way into his shop. He also does the majority of his metalwork and rust blue finishes his projects.

The rifle shown here is a Zanardini top-lever break-open (*kipplauf*) single-shot rifle chambered for the 7×57R cartridge. Craig crafted the lovely custom stock out of a blank of Turkish walnut and followed

pretty much the accepted European styling for such a rifle. He did build in a higher comb for scope shooting. He shop-made a rear swivel stud to match the factory stud on the barrel, skeletonized a Dressel miniature grip cap to go with the McFarland skeleton buttplate, and installed the buttplate with a checkered wood insert inside the steel buttplate, as the rifle has a through-bolt attachment precluding normal installation. He checkered the stock at 26 lines per inch and added mullered borders, then checkered the grip cap and buttplate installations at 32 lines per inch. He then slow rust blued the metalwork to complete the job. Geoffroy Gournet did the engraving.





Photos courtesy Epic Photography



Al Lind

Al Lind is one of the seven founding members of the American Custom Gunmakers Guild, starting way back in 1983. He has been in business as a stockmaker since 1972, the same year I had my first article published nationally in Petersen's *Guns & Ammo Magazine*. Al was one of the first people in the business I met. I met Al, Don and Norma Allen, Jim Wilkinson (of Rifle Ranch fame), Bill Ruger, and John T. Amber, all at the same time. It was in Alexandria Palace, in London, England, in April 1978. Al was a great friend of Don Allen. Both flew commercially for Northwest Airlines as captains, and both were stockmakers.

Al crafted the stock on this pre-'64 Model 70 chambered for .270 Winchester, from a stick of genuine French walnut cut in 1936. Even in Washington State, where Al works and lives, that blank is never going to be more stable and dry than it is right now. He also used a blind magazine on this job to save weight. Lynn Wright did the sparse, but elegant engraving.



Photos courtesy Tom Alexander



Al Lofgren

Al Lofgren spearheaded the effort on this project. He started with a 1960s-era Sako L-461 action that Ed LaPour completely rebuilt, substantially modified, and significantly restyled. Al did all the stock work, including a skeletonized steel buttplate and grip cap. The blank looks to be a magnificent stick of English, and Al told me it was an absolute joy to work with. Brian Hochstrat then followed up with his fantastic engraving and precious metal inlay work. Brian's work just keeps on getting better and better, and it was superlative to start with. This rifle is very Germanic in styling, as are most of Lofgren's rifles. Such design is not everyone's cup of tea, but the quality of the work just doesn't get any better than this.







Photos courtesy Tom Alexander

Ralf Martini

Ralf Martini was born and raised in what was then West Germany. He completed his apprenticeship there as a machinist. Even at an early age, though, he was extremely interested in firearms and hunting. He was drafted into the military and served in an Alpine force in the sniping division. While there, he was awarded a gold medal for marksmanship as a sniper.

He left Germany and moved to Manitoba, Canada, in 1986, where he worked as a guide and outfitter for awhile. He then returned to machining and tool and die making, where he worked for 12 years. In his off-duty hours, he did gunsmithing work. In 1996, he took the dive and went into business for himself as a full-time gunsmith and custom gun maker.

Relatively recently, Ralf was retained by the German rifle manufacturer F.W. Heym to design a dangerous-game rifle around Heym's big magnum action. That rifle is now in production. One of his most recent projects was the building of a large-caliber rifle for a friend of mine, Jim McClellan. That rifle is shown here. It is built on a Granite Mountain Arms large magnum double square bridge action. Ralf barreled it with one of his ovoid barrels with an integral shallow rib, front sight ramp, and sling swivel stud. He chambered it for the .416 Rigby cartridge and stocked the rifle in a wonderful stick of English walnut, checkering a point pattern with flat top diamonds. The

engraving and gold inlay on the barrel was done by Warren Smith. Marty Rabeno beautifully executed all the other extensive engraving on the rifle.







Photos courtesy Christian Kimber

John Maxson

John Maxson is one of the founding members of the American Custom Gunmakers Guild. He's been around forever. He stocked this Remington Model 870 20-bore with a nice stick of English walnut. He did it straight grip, English style (as if one could ever find an Englishman who'd admit to the existence of a pump-action shotgun!). Since 20-bore guns are light kickers, he used a Neidner curved steel butt plate. The engraving is by Mike Sawmiller of Spenceville, Ohio.

Now for the really interesting thing, for me anyway, and I hope the readers, as well. I've not done much in the way of gun work myself, with the exception of a lot of checkering. Doing so, I learned early on that there were many better ways of going stark raving nuts than by checkering gunstocks. I did it only because I couldn't afford to have the checkering done that I wanted. Now I've done, or attempted to do, a couple over-the-grip patterns. Getting all the checkering lines to meet together where they must for such a job is a nightmare. Not only did John accomplish that Herculean task at the top of the grip, he did it at the bottom of the grip panel, as well. The checkering continues 360 degrees around the grip, unbroken. I call that nigh onto impossible. My hat is off to him, and then some.



Photos courtesy Tom Alexander





John Mercer

I first met John Mercer around 1985. At the time, he was working as a stockmaker for Paul Jaeger, in Jenkintown, Pennsylvania. John made the stock on the “Lion Rifle,” the fourth in the Safari Club International Guns of the Big Five series. The rifle sold at auction for \$140,000, at the time, a record for a modern firearm.

When Paul Jaeger was sold to Dunn’s, Inc., Mercer moved with the company to Grand Junction, Tennessee. He stayed there for a number of years, but has been in Cody, Wyoming for the past 12 years, operating J.M. Mercer Co.

The rifle shown here started as a 1909 Argentine 98 Mauser action and a Douglas premium barrel. John purchased a nice Circassian walnut blank from Cecil Fredi. He did all the work on the rifle, including the Blackburn bottom metal installation, the three-position safety, the Jaeger trigger, and a skeleton buttplate and grip cap. Bob Strosin engraved this lovely rifle. It is chambered for the 7×57 cartridge.



Photos courtesy John Mercer



David Miller Co.

The David Miller Co. is composed of David Miller and Curt Crum. I first learned of their existence and met up with them, sometime in 1978. I was, at the time, consulting with the German manufacturer F.W. Heym, and my major task with them was to “Americanize” their product line. Heym had been out of the USA market for quite a number of years, and both its styling and products had reverted back to their German heritage. That was just fine for the home market, but not the American consumer.

I’d run across an ad with a photo of a bolt-action rifle in *Rifle Magazine*. It was just what I was looking for. I had never heard of the David Miller Co. before, but I drove up to Tucson to meet them. That was some 35 years ago, and they are still going strong. I have watched, over time, Dave and Curt executing every task required to build as perfect a hunting instrument as is humanly possible. They build what David likes to call “functional art,” and that’s as good a description as any. Nothing on a Miller rifle is left to chance, and no stone is left unturned in search of perfection.

The division of labor in the shop is that Curt does all the stock work and a big portion of the metalwork. Dave does the rest of the metalwork, builds all the Miller scope mounts, and does the marketing and selling of their rifles. They have three models, the top of the line Classic, the Marksmen, and the GraGun.





Pictured above are two of the finest bolt-action rifles ever made, both from the David Miller Co. These are the epitome of functional art. Above is a rather flashy example of a Marksmen model. The client selected the laminate blank used for the stock.

Glen Morovits

Glen attended Trinidad State Junior College, graduating in 1981. He then went to work for Don Allen, Inc., in Northfield, Minnesota, which later moved to Sturgis, South Dakota, and became Dakota Arms. I met Glen Morovits several years ago, when he was a young stockmaker for Dakota Arms. I believe he'd worked his way up to the head of the stocking department before leaving the company. He also did a good bit of work for Butch Searcy, when Butch had an operation in Sturgis. He may still do a bit of work for Butch, for all I know, although Butch closed his Sturgis operation some time ago.

Glen is a really good stock maker and metalsmith and is a member of ACGG in both categories. He seems equally adept at doing bolt-actions, single-shots, or doubles. I had a choice of photos of all three types to display here and took the double rifle, simply because there aren't many shown elsewhere in this book.

This double started as a "parts kit" of sorts he obtained from Butch Searcy. That kit consisted of all the metal parts necessary to build the rifle, but in their rough, unfinished state. Glen had to build the rifle from these rough parts, including assembling the barrels and regulating and fitting them to the action once that was assembled and finished. After all that, he then made the stock. Once the rifle was complete, Ron Collins did the tasteful engraving. It is now ready for Africa.



Photos courtesy James Anderson



Steve Nelson

(Photos and Biography by Steve Nelson)

With the increased airport security measures these days, more and more of my clients are looking for more easily transported firearms. Of course, the classic double rifle is very portable, but many of my clients want a bolt-action rifle for their international hunting. Three years ago, I completed a bolt rifle with a barrel that could be unscrewed by hand and locked into battery with a latch. Although that method worked fine, it is more expensive and is best done with square or Acme threads on the action and barrel. Two years ago, a client came to me looking for a strong, accurate bolt-action rifle built on his favorite Winchester pre-'64 Model 70 action. He needed a rifle that would be easier to transport than the traditional full-length bolt rifle, but one not necessarily half the length. We opted to make the barreled action removable from the stock. This allowed for a case length of 34 inches, which fit well within his traveling requirements.

Just so you won't think this technique was chosen to save money, the client also specified he wanted me to make a barrel with integral quarter-rib to my own unique style. Although he didn't specify it, I decided the quarter-rib had to be very obviously integral, with no chance anyone would suspect it was soldered to the barrel. To achieve that look, I started with a Pac-Nor 1.300-inch diameter blank and machined the quarter-rib with a radius where it meets the round barrel.

machined the quarter rib with a radius where it meets the round barrel. I did opt to add the sling swivel base as a separate piece, to save time and get the project done on schedule. Also a little differently, the client chose to have this rifle chambered for the .375 Ruger cartridge, rather than the H&H version. He is getting outstanding velocities and wonderful accuracy out of these cartridges, to the point where I am considering rebarrelling my own medium-bore rifle to this cartridge.

Since this client likes as low a scope mounting as possible, we chose to use the tried and proven Griffin & Howe side mount. This also allowed the use of two different scopes, one the Leupold one-inch diameter VX-3 1.5-5x, the other the 30mm VX-7. Both scopes ride next to the rifle in the aluminum airline case.

In order to accomplish the takedown feature with a close return to battery after repeated disassembly/reassembly cycles, I pillar bedded the action with a skin close, but still easily removed, fitted into the stock. To further assure the stability of the rifle, I chose a blank of Bastogne walnut, which had been aging in my wood closet for more than 10 years. Actually, the man I bought the blank from had held it over 10 years in his vaults, planning to use it some day for himself. It took some serious persuading to get him to part with it!

Because the client lives near me, I was able to make up a pattern stock to assure the rifle would fit him perfectly. I then machined that pattern into the final blank with my stock duplicator. After inletting the metal for a close, but not too close, fit, I thoroughly sealed the interior and applied multiple coats of tung oil finish to the outside. Finished off with a good rubdown, the wood grain and fiddleback show through with a warm glow. The 24 lines per inch point pattern

checkering gives just the right gripping surface, and the open grip design helps the rifle point like a fine shotgun.

The only metal decorations are the checkered and engraved bolt knob and the finely stippled surface on the top of the quarter-rib. The whole of the metalwork was polished to a 320-grit level and slow rust blued to match the warmth of the stock finish. In order to maintain the classic “African rifle” character of the project, I added two recoil bolts in front and in back of the magazine well.

I am pleased to report that this rifle is no “closet queen.” She went on a six-week safari to Tanzania, in 2010, and is headed for the elk woods this year. When we spend so much time and effort making sure these rifles perform flawlessly, it is nice to see them put to the test in the field.



Dave Norin

Dave Norin is a highly talented gun maker located in the Chicago area. When it comes to guns, Dave can do pretty much anything. He does work ranging from total restorations to building complete custom guns, and even just rather simple repairs. Last time we spoke on that issue, he told me he was trying to get away from general repair work and concentrate on his custom jobs. Shown here is one of his recent completions, a lovely, open sighted stalking rifle chambered for the 7×57 cartridge and built around a Mauser 98 action. It features Jerry Fisher round bottom metal, a Biesen steel buttplate, a Krieger barrel, and a California English stock. All work, except for the engraving, was done in the Norin shop. Ken Hurst did the engraving. In addition to his gun work, Dave is also the editor of the *Gunmaker*, the journal of the American Custom Gunmakers Guild, of which he is a longtime member.



Photos courtesy Tom Alexander

Joe Smithson

Joe Smithson is one of the rising stars in the custom gun making field. He is as close to being a protégé of Jerry Fisher as there is. He worked with Jerry for quite a period of time, before going off on his own. I first learned of him from Jerry, who asked me at one of the ACGG/FEGA Exhibitions if I had seen his work. At the time, I hadn't, so I went by his display for a look. It was more than impressive, and he just keeps on getting better and better. He does fabulous metalwork and equally superb woodwork. He developed and manufactures a quick-detachable scope mounting system that is as slick as any I've ever seen, and much slicker than most out there. It is as precise as a Swiss watch. He and a few others in his general age group are the future of custom gun making.





Photos courtesy Steven Dodd Hughes

Starting with a Granite Mountain Arms left-hand magnum Mauser action, Joe crafted this dangerous-game rifle for his southpaw customer. Clearly English in styling, it is everything a classic rifle should be. Chambered for the .416 Rigby cartridge, it is ready for the African bush. The express-type shallow “V” rear sight consists of one standing and one folding leaf, i.e., it is uncluttered with three or four folding leaves that will never be used. The cheekpiece on the lovely stock is large enough to be useful, but not too large, and the leather-covered recoil pad adds just the right amount of elegance to this rifle. The checkering pattern is a simple point pattern that is precisely cut and coarse enough to be useful, but fine enough to be beautiful. It is a very lovely rifle.

Jeff Tapp

Jeff built his first custom rifle, a Mauser action 7×57, when he was 17, having never actually seen a custom rifle firsthand. He made full-scale drawings from magazine pictures of Jerry Fisher rifles, to determine the proper dimensions and styling. After completing that first rifle, Jeff met a second-generation custom gun maker, the uncle of a high school classmate. This meeting kindled his interest even more, and he became a lifelong custom gun junkie.

Jeff worked as an apprentice at that gun shop after school for several years, furthering his knowledge and gun making experience. After attending college, he continued building custom guns for both friends and clients, perfecting his skills through trial and error. He joined the ACGG as an associate member in 1998, and attended his first annual combined FEGA/ACGG exhibition in 2000. His work is superb.



Photos courtesy Jeff Tapp

Above, two views of a custom rifle that began as a Dakota Model 76 action, with a Lilja No. 1 contour barrel and Blackburn bottom metal for a pre-'64 Model adapted for the Dakota. Jeff crafted the stock from a blank of English walnut from Jim Bisio, and he also did the nitre and rust bluing. He checkered the stock 26 lines per inch, with 32 lines per inch on the islands within the skeleton buttplate and grip cap. Tommy Kaye engraved the rifle. The rifle is chambered for the .280 Remington cartridge.



This 1928-era Parker GHE shotgun at right was a basket case, when Jeff got it. It had not been well cared for, and “Bubba” had attempted repairs sometime in the past, making matters worse. Jeff bought the gun in that condition with the aim of building a custom shotgun for hunting quail and doves in Texas. He fabricated a new, straight grip trigger guard (it originally had a pistol grip), made all new external screws for the gun (11 total), recontoured the safety button, scalloped the frame, rebated the trigger plate, and took approximately a pound of steel from the original gun. He fitted and finished all internal parts and made a set of heel and toe plates. Kirk Merrington replaced the lower rib on the barrels and deepened the chambers to 2¾-inch for modern ammunition. He then made the stock from a stick of English, checkering it 28 lines per inch and wrapping under the grip. He installed the heel and toe plates, checkering the wood at 32 lines per inch in those locations. Doug Turnbull did the color case hardening.

Hugh Toenjes

The Masterpiece rifle shown here was totally crafted by Hugh Toenjes and seems to fit in with the “new school” of contemporary long rifles, though Toenjes employed primarily old school techniques and tools in its creation. The two tools he used the most in this project were a file and a hacksaw! He devoted more than 3,000 highly skilled hours of bench time to complete the rifle, and then invested another 3,000 hours crafting the presentation case and all the accessories. This presentation grade gun and case represents the finest contemporary craftsmanship using old world techniques that can be found in today’s gun making arena.







Photos courtesy Hugh Toenjes



James Tucker

When I first met James Tucker, he was a young, budding stockmaker working at Paul Jaeger, Inc., in Pennsylvania. Prior to that, the California-born Tucker had graduated from the gunsmithing program at Lassen College, followed by 18 months with Pacific International Service Co., where he performed bluing and stockwork, and then a year with Weatherby's custom shop as a stockmaker. At Paul Jaeger, he was the head stockmaker for three years.

When his time with Jaeger drew to a close, James next moved back to California, going into business for himself there. He did that for 14 years, then worked for Rigby, in Paso Robles, for nearly five years as its head stockmaker. He moved to the Pacific Northwest after that and again went into business for himself, and that's where he's been for the past 10 years.

The rifle shown here started with a Granite Mountain Arms Mauser action. James detail filed and polished the action and bottom metal, finishing up the trigger guard with a nice beaded edge. James shares shop space with Reto Buehler, and Reto installed the Pac-Nor barrel and chambered it for the .375 H&H cartridge. Reto then replaced the bolt handle and installed the Recknagel pivot QD mounts into the action bridges.

James crafted the stock from a very dense stick of California English walnut, styling it in the manner of a London best quality rifle.

It got a pancake cheekpiece and point pattern checkering at 24 lines per inch with mulled borders. He also installed a Pachmayr Decelerator pad and a trap grip cap. Stan Tabassco finished the job in his slow rust blue. James is a master at making custom stocks, evident in these photos.



Photos courtesy Brian Dierks



Michael D. Ullman

Michael D. Ullman got started with guns and shooting relatively late in life. He was 19 years old, when he fired his first gun, while earning a BS degree in biology from The Evergreen State College.

Even though he is now a Texan, he began his gun making career in Colorado. He attended the Colorado Gunsmithing Academy of Lamar. After graduation, he opened his own shop, Frontier Gunsmithing, in Eads, Colorado. There, in addition to specializing in repair and restoration of western-style cartridge arms, he built a few custom rifles each year. Most were single-shots, his preferred platform. In 2005, he and his family moved to New Braunfels, Texas, so he could work with Hill Country Rifles. He is now that company's in-house stockmaker and custom metalsmith. He is also the designer and creator of Hill Country's popular Genesis line of rifles. In his own shop, he is expanding his portfolio of work and can be found building custom handguns, bolt-action rifles, and muzzleloaders.

Shown here is an example of his current work. He built this rifle around a Hagn small-action single-shot. It is chambered for the 6mm BR cartridge. The barrel is half-round/half-octagon and features an integral quarter-rib and custom sling swivel studs shop-made from bar stock. He fashioned the excellent stock from a blank of Turkish-obtained from Luxus walnut and checkered it 26 lines per inch in a pleasing point pattern. Mark Swanson did the beautiful and

appropriate engraving.



Photos courtesy Michael D. Ullman





David Wesbrook

Dave Wesbrook is a Jack of all trades — and a master of all! He is, first and foremost, a professional custom stockmaker. He is also a book author and a successful professional photographer. His iconic book *Professional Stockmaking* was recently reprinted by Wolfe Publishing Co. and is once again available after a few years out of print. In the book, Wesbrook preaches what he practices.

The rifle shown here is an example of his artistry in wood. The rifle is a G33/40 small ring Mauser action on which another icon in the business, Ted Blackburn, did all the metalwork. Better known for his bottom metal sets and Mauser triggers that he manufactured and sold to the trade for many years, Ted is, without doubt, a superb metalsmith. Wesbrook stocked the rifle in a super stick of *Juglans regia* (thin-shelled walnut) in his classical style. It is clean, seemingly simple, and everything is in the right place in the right amount. It just doesn't get any better than this.





Photos courtesy David Wesbrook





Duane Wiebe

Duane Wiebe has been making fine custom rifles for nearly as long as Jerry Fisher. I first learned of Duane and his great work from Jim Carmichel. I can't remember now if it was in one of his *Outdoor Life* articles or in his book *The Modern Rifle*, published by Winchester Press, back about 1975. I'm thinking it was the book, as I also learned of several other custom makers at the same time. He'd mentioned some I already knew about, Dale Goens and Lenard Brownell, for instance. But he also mentioned Jim Cloward, Bob Winter, Mike Connor, and Gary Goudy, along with Duane. I was, at that time, unfamiliar with him. Anyway, Duane was going strong in the mid-'70s, but I don't know how much earlier he started.

Duane is still going strong today. He does most everything in-house, performing both his own wood and metalwork. I don't think he's taken up engraving, at least not yet, but he prefers to do the entire job of crafting a rifle himself. As he told me, he wants either all the credit or all the blame. His rifles are clean, elegantly simple, and purely classic in design. Most of his recent work I've seen has been devoted to large-caliber (.375 H&H and up), English-style magazine rifles. All have been marvelous. The example shown here is typical of his current creations. This one is a .375 H&H built on a Mauser action, with all the bells and whistles.



Photos courtesy of Duane Wiebe



Kevin Wigton

Kevin Wigton grew up in a small town in Pennsylvania. His next-door neighbor was an uncle who had a small gunsmithing shop that he ran out of his house. He was a gifted stock carver and was well known for his oak leaf carved borders and the deer scenes he carved into stocks. Kevin's grandfather lived on the other side of his house, and he was a big gun collector and trader. He always had three Kentucky or Pennsylvania flintlock long rifles, complete with matching powder horns, hanging on his wall. With such an upbringing, is it little wonder guns played an important role in his life?

After completing high school, Kevin attended the gunsmithing program at the Colorado School of Trades. Two of his instructors while he was in the program were Curt Crum (David Miller Co.) and the late Ralph Bone. Jerry Fisher also stopped by every so often and brought examples of custom guns. Kevin graduated, in 1978, and took a job in Michigan. He has lived there since. These days he is the chief gunsmith for Williams Gun Sight, Inc. He has worked his entire life as a gunsmith, and his passion is stockmaking. Since going to work at Williams, he met and became friends with Joe Rundell, a fantastic engraver and wood carver. Joe inspired him to take up using carved borders on some of his checkering patterns.

The rifle shown here is a pre-'64 Model 70 chambered for the .30-06 cartridge. Kevin crafted the Turkish walnut stock, checkering it at

32 lines per inch. He also did the ivory inlays. Joe Rundell engraved the rifle and did the border carving around the checkering, as well as the scrimshaw work on the ivory inlays. Kevin finished the job with a satin bead blast black oxide finish.





Photos courtesy Terry Tremewan



13

The Custom Guilds

For many years, there was no organization devoted specifically to the custom gun trade. Most makers were members of the National Rifle Association, but the NRA, good as it was and is, is a broad-based organization that works for the benefit of all firearms and firearms owners and users. The NRA is a necessary organization, and all firearm enthusiasts should be members. Still, the custom trade felt more was needed to represent its specialized interests.

One champion of this philosophy was the late John T. Amber. The editor of *Gun Digest* for more than three decades, Amber used that forum to nudge the custom gun trade to the forefront of his readers. Every issue of the book contained a photographic section on custom guns and custom engraving. Without fail, this was the section in the book I turned to first, when the new annual edition came out. Apparently, so did many other readers each year, because the section seemed to expand each and every volume. In addition, almost every issue of the book contained a feature article or two on the subject; the editor himself penned many. He had many friends in the business and usually had several personal custom jobs on order. It was a rare issue that didn't report on the custom deliveries he had received during the year. It was from his writings that I first learned of many craftsmen in the field and saw photo coverage of their work. Later, when I got to know Amber well, he introduced me to many of them. John T. Amber, whether they knew it or not, was the custom gun maker and engraver's best friend.

The gun engravers as a genre and artisan group were the first to organize. In June 1980, 21 engravers from across the country met in Las Vegas, Nevada. This

informal meeting was the catalyst for the formation of the Firearms Engravers Guild of America (FEGA). The group met again the following year, in Houston, where 35 engravers formally voted the guild into existence, adopting bylaws and incorporating the new, not-for-profit guild in the state of Texas.

The established objectives of FEGA are to provide opportunities for engravers to exchange ideas and knowledge, assist in improving individual skills, promote firearms engraving as a legitimate art form, and to raise public interest and appreciation in quality firearms engraving. Since its formation, FEGA has become the recognized source of information on American engravers and engraving. It has significantly raised the level of recognition for the art, and the camaraderie of its members and the resulting exchanges of artistic and ethical thought have inspired unprecedented interest in the art form. Before the founding of the guild, American engravers were generally thought, with a few exceptions, to lag several orders of magnitude behind their European counterparts in talent and skill. The development of FEGA had much to do with turning around that ill-founded opinion.



Photo courtesy Hugh Toenjes

This presentation grade flintlock rifle represents the finest contemporary craftsmanship using old world techniques that is apt to be found today. Hugh Toenjes built this masterpiece.



Photo courtesy Mike Dubber

A Sheriff's Model Colt Single Action from the shop of Mike Dubber. Mike's engravings on anything are superb, but he particularly excels on Colt Single Action revolvers.



Photo courtesy Jim Blai

One of Jim Blair's strengths as a Master Engraver is his versatility. He is a master of many styles.



Photo courtesy Jim Blair

An exquisite floorplate for a pre-'64 Model 70 rifle, from the shop of Jim Blair.



Photo courtesy Gary Bolster

A pair of rifles from Gary Goudy, stocked with wood to kill for.



Clean lines, elegant simplicity, and flawless craftsmanship characterize Lee Helgeland's work. This Hagn .404 Jeffery single-shot rifle exemplifies his execution and design.



Photo courtesy Christian Kimber

A magnificent Hagn single-shot .300 H&H as crafted by Ralf Martini. Of note is the English-type flat-topped checkering.



Photo courtesy James Anderson

This is one of, if not the best, Ruger No. 1 I've ever seen. James Anderson built the rifle and Roger Kehr added just the right style and amount of engraving.



Photo courtesy James Anderson

Both sides of a really elegant mini-Mauser. Shane Thompson did much of the metalwork, though James Anderson also did a bit of the metalwork and all the stockwork and finishing. Marvelous is not a strong enough word to describe it.

With the engravers guild a reality, the custom gun makers weren't far behind. The American Custom Gunmakers Guild (ACGG) came into existence, in 1983, at the NRA annual member's meeting, in Phoenix, Arizona. Seventy-six charter members joined at that time. The ACGG is also incorporated as a non-profit organization. That guild grew out of the minds of two men, Steve Billeb and John Maxon, the pair having surveyed their peers in the trade and finding common interest and support in the proposal.

The purpose of the ACGG is to be a viable association of craftsmen who are actively engaged in the art of custom gun making, stockmaking, metalsmithing, engraving, and other related specialties. The guild promotes the exchange of ideas and techniques and strives to promote public interest and awareness in the craft. The intent is to advance the cause and betterment of custom gun making as an accepted art form. The ACGG strives to promote standards of excellence and, to this end, accepts new regular members into the guild only after the prospective member submits samples of work for inspection and acceptance by current regular members present at the annual meeting. High ethical standards are mandatory, and an ethics committee was mandated by the bylaws for the sole purpose of resolving disputes and preventing legitimate complaints.



Photo courtesy Reto Buehler

When an aficionado wants a rifle in the style of a pre-war Rigby, they should consider Reto Buehler to build it for them. The original Rigby is the bottom rifle in the pair pictured above.

In 1985, FEGA and the ACGG joined forces to produce an annual Custom Gunmakers and Engravers Exhibition. This show is the greatest assembly of custom guns and engraving in America. The gathering is also used to conduct educational seminars and necessary annual business, as well as recognize individual and group achievement with an awards program. Each guild also publishes its own journal (ACGG The Gunmaker, FEGA The Engraver), using them to pass along news and provide educational tips from the membership. Additionally, each guild produces videotapes on various aspects of their art and makes them available for a nominal fee.

With the exception of combining forces for the exhibition, each guild has always been a separate organization. Starting in 2013, however, and for many reasons, the two guilds also decided to go their separate ways with their exhibition. The 2013 ACGG Exhibition was held in conjunction with the Dallas Safari Club Convention, in Dallas, Texas. It was located within the DSC convention site, but was otherwise separate. The 2013 FEGA Exhibition was held in Reno, Nevada, during the same period as the Safari Club International Convention, but in a separate location.

There are, of course, very talented artisans, both engravers and gun makers, who are not members of either guild. Their reasons are as varied as their personalities. Some are such individualists that they simply prefer to stand alone. Others have political disagreements with the guilds and remain out for those

Others have political disagreements with the guilds and remain out for those reasons. Some, I suppose, feel they have succeeded very nicely without membership in such an organization and see no advantage in changing that. Artisans don't join the guilds for the same reasons that other people don't join the Elks, Moose, or Boy Scouts, for that matter. Still, the ACGG has, including associates, about 300 members. FEAGA has a few less, with about 250. FEAGA makes no distinction between regular and associate membership. Any interested individual can join. Of this total number, perhaps half are actively involved in the craft. It does, however, in addition to the regular membership, have a member category of Master Engraver. This category is open only to those who have passed a certification program. As of this writing, the published roster of Master Engravers lists 41 members.



Barry Lee Hands is doing fantastic engraving work that's innovative and creative. Here's a beautiful 1911 from his shop.

The two guilds have done much to promote awareness in all aspects of custom gun making. The obvious increase in the general quality of custom guns today, as compared to those works from only a few short years ago, is due largely to the existence of the guilds. Old John Amber knew what he was doing, when he goaded and prodded various artisans into getting together with the idea of such an organization in mind. Every aspect of the crafting of custom guns has dramatically improved as a result.



Photo courtesy Sam Welch

A marvelous engraving on the buttplate of a wonderful custom rifle built by Paul Dressel and using a Brian Harre action from New Zealand. Sam Welch did the fantastic work.

14

Factory Custom Shop Guns

One alternative to ordering a full custom rifle is to contact your preferred big-name manufacturer and determine if they have, in addition to their normal production, a factory custom shop. Remington has a custom shop and, last I knew, so does Winchester. At one time, Roy Weatherby also maintained a custom shop, and his namesake company continues this practice today. Ruger, on the other hand, has never had a custom shop; I gather that decision came directly from William B. Ruger himself.

Several European manufacturers perform custom work to order, but don't maintain a custom shop *per se*. These plants employ more handwork in their production anyway, so adding custom features via their normal work force is not difficult. For particularly exquisite features, such as extensive engraving, they often employ outside artisans on a subcontract basis, while they execute standard engraving patterns using in-house personnel.

There are a few manufacturers that are nothing but custom shops. I am thinking of such distinguished firms as Purdey, Holland & Holland, Boss, Hartmann & Weiss, and a few others. Referring to such firms as "manufacturers" is probably a misnomer in the first place. At one time, Purdey, H&H, and several others did offer a "standard" model or two. I don't believe any of them do anymore, today accepting clients only on a special order basis. If that is the case, and I believe it is, then they are much more of a custom shop operation than a manufacturer.

I'm pretty familiar with the operation of a small German manufacturer, F.W. Heym. Most continental European manufacturers are similar in their operations,

and the way Heym does things would be, I think, representative of the others. Heym offers a standard line of firearms to the trade. It has a few bolt-action hunting rifle models, a double rifle in both side-by-side and over/under versions, plus a variety of combination gun models. The closest things to mass-produced firearms Heym offers are the bolt-action Model SR-21 and Model SR-30 hunting rifles. Even these, though, have considerable handwork involved in their construction. A customer can order special wood, personal stock dimensions, barrel lengths, sights, and other relatively minor changes, all at extra cost and longer delivery times, of course. The client can also order a wide variety of engraving patterns. In-house engravers do all the simpler jobs, while the company contracts with private artisans for more complicated jobs. Heym has several Master Engravers it can call on for engraving outside the capabilities of in-house artisans.

Heym double and combination guns are available in standard models, each almost exactly like the next. Options are also available on these models. Much handwork goes into their construction anyway, much more so than the repeaters.

Perhaps the most elaborate gun Heym has ever produced was put together in the mid-'80s. It was the third rifle in Safari Club International's "Guns of the Big Five" series and commemorated the Cape buffalo. For this work, Heym chose to produce an elegant sidelock double rifle. I believe it was probably the finest gun Heym has ever built, certainly in recent years, anyway. The gun was sold at auction in, I believe, 1984, for \$65,000, and I think that was a record price for a modern firearm at the time.



Jack O'Connor's son, Bradford, along with the staff of the Jack O'Connor Hunting Heritage and Education Center in Lewiston, Idaho, were instrumental in persuading Winchester to come out with a couple variations of Model 70s chambered for, what else, the .270, and commemorating Jack. Bradford appeared at the Winchester exhibit at SHOT and brought his father's favorite rifles with him for display.

When United States Repeating Arms Corp. (USRAC) took over the firearms manufacturing division of Winchester, it retained the rights to use the Winchester name and logo. It also preserved the Winchester custom shop. The fortunes of the new company, USRAC, with the old product name, Winchester, were pretty rocky for several years. Such problems were, in fact, not limited to USRAC. Most of the industry had a pretty difficult time during that era. Some old and well-known names fell by the wayside. Others, equally respected, barely

hung on by the skin of their teeth.

As Olin had done with Winchester firearms, DuPont divested itself of Remington by selling the company to an investment group, in 1993, and the corporate offices were moved to North Carolina, in 1996. Cerberus acquired a controlling interest in Remington, in 2007. USRAC and Browning were finally bought by, first, a French consortium, and some much-needed capital was invested in those operations. Belgium's Fabrique Nationale later acquired both companies. The USRAC name was dropped and reverted back to Winchester and, in 2006, Winchester ceased operation in its old home, in New Haven, Connecticut. I am told that the primary reason for the closure was a labor dispute with the unionized workforce. As a part of the closure agreement, FN apparently agreed not to produce any firearms anywhere under the Winchester trademark for a period of time, two years I believe. Winchester resumed operations for the Model 70, in 2008, at its South Carolina facility.



The top rifle in this display is the famous No. 2 Winchester Model 70 that Al Biesen built for O'Connor. It became Jack's all time favorite. He once wrote that he intended to have it buried with him, but, obviously, he didn't. The rifle is still in the O'Connor family and are usually on display at the Jack O'Connor Hunting and Education Center in Idaho. The next two rifles are the two versions of the Commemorative rifle that Winchester marketed. Both editions sold out quickly.

Remington's custom shop goes back to the founding of the company. When Eliphalet Remington started making firearms, in 1816, each one was individually crafted for the customer, with no two precisely alike. Whatever the customer wanted, he got, though Remington did not limit his production to merely aesthetics. His major goal was to produce a firearm that functioned and shot as good as it looked. It was this reputation for building fine, individually built guns that eventually pushed Remington into the production gun business.

Since Remington's beginnings, the custom shop has continually played a

very important role in the Remington production and its growth. Several production guns can trace their roots to the work of the custom shop, both in design and in functional improvements. The custom shop continues to do the same today, just as it's done for about 175 years now.



Photos courtesy Weatherby, Inc.

The Weatherby Custom Shop has many, many options for its products. Shown here are two of several models available, the Mark V Outfitter Custom at top, and the Mark V Royal Custom. The client can add options to their heart's desire and as their wallet permits.

The major differences in the products of in-house custom shops and the regular production pieces can be summed up in one word: handwork. Most custom shops start out with factory-produced production parts, the same parts that will eventually end up in normal production guns. The big difference is that the custom shops draw their components very early in the production process. Each then brings the components into the custom shop and the handwork begins. Actions are trued, hand-honed, and polished until every part functions together as a unit. Remington, for instance, draws its barrels as blanks with only the boring and rifling completed. The remainder of the barrel work — profiling, chambering, threading, polishing, and finishing — is done one barrel at a time.

Winchester, on the other hand, at least last I knew about it, uses selected production barrels for its work unless a match grade barrel is specified on the order. In that case, Winchester uses an outside contractor with a reputation for the highest quality precision barrel work.

Each custom shop selects actions for their work while the guns are in the annealed state. This considerably eases the task of preparing the action. Any engraving is also completed before being properly tempered. Factory custom shops offer a wide variety of options that enable the customer to personalize their factory guns. Remington will also do custom work on its shotguns, as well as pump-action and semi-auto rifles, while the Winchester shop does no work on shotguns.

Smith & Wesson had a factory custom shop for many years, but I am told it no longer provides this service. It does have a specialty shop that functions much like a custom shop; however, this facility specializes in turning out special models in limited numbers. This shop will turn out from a few hundred to perhaps a thousand limited edition models. Colt's, on the other hand, still maintains its custom shop. With the company's long history, it has provided a custom shop almost from the beginning.

Naturally, the prices for products from any custom shop are considerably higher than the production firearms, as well they should be. There's all the handwork that goes into such creations. Higher grades of wood cost more, of course, and so, too, do the array of optional features available. Still, the prices are, in general, well below the cost of a full-blown custom job from an individual maker.

Do the factory custom shops offer a good value for the dollar invested? I certainly think that they do. They also offer the prospective customer another avenue to obtain a specialized and/or personalized firearm and at a reasonable cost.

15

In Between— Semi-Custom Guns

At the beginning of this *2nd Edition*, I attempted to define the term “custom gun.” While I’m satisfied with the definition, the reality is that a custom gun is whatever an individual wants it to be. Semi-custom, on the other hand, is somewhere between the standard factory product and the full-blown custom job. Many are produced that are, in most ways, very similar to a custom order. They are largely machine made, but still have enough handwork involved to permit tailoring the product to individual wants and needs, within limits. Large numbers of options are usually offered, at extra cost, of course, to permit this tailoring.

The semi-custom maker will turn out several stocks on duplicating machines with just enough excess wood to permit some tailoring. The duplicated blank will then go to one of several stockmakers — Dakota Arms, for instance, had six or so — who fit it to the metal and bring it to final dimensions. It then goes to the finishing department and, after that, to one of perhaps two or three or more specialists for a checkering job. All other aspects of the job — barreling, polishing, fitting, bluing, etc., are similarly carried out. In contrast, on most full custom jobs, one or two artisans do all the work. Some of the bigger semi-custom shops turn out several guns each day, the full custom maker maybe one each month.

Perhaps the best example of a semi-custom gun on the market today, and the one I am personally most familiar with, is produced by Dakota Arms. I do not mean this chapter to be a commercial for Dakota, first, because it doesn’t need my help, and second, I’m not in the advertising business. I will key on its operation, though, because I am far more knowledgeable about what it does and

how it does it than I am others. I am sure similar operations work much in the same manner.

Two superb craftsmen, Pete Grisel and Don Allen, founded Dakota Arms. Grisel was the metalsmithing expert and Allen the stockmaker. Their idea was to craft fine rifles utilizing modern machinery and techniques, while retaining the ability to provide many custom features unavailable from most factory operations. The first development of the duo was the flagship of the Dakota line, the Dakota 76 bolt-action sporter. Utilizing the best features from both the pre-'64 Winchester Model 70 and the Mauser Model 98, the 76 was cosmetically styled as a dead ringer for the Model 70.

The rifle was an immediate success. Shortly after it was introduced to the market, Grisel left the company and Allen and his wife, Norma, took full charge of the operation. Since that founding and the introduction of the flagship Model 76, a lot of things have happened. The Allens introduced a single-shot rifle, the Model 10, to the line. They followed that with another bolt-action rifle, the Model 97. The Model 97 was intended for the sportsman who wanted a Dakota, but couldn't afford it. Allen developed the Model 97 utilizing a number of cost-saving features, without compromising on the functionality and accuracy of the rifle.



Author Turpin with the nilgai antelope he took in South Texas, near the El Sauz ranch. Nilgai, native to India and Pakistan, were imported into Texas, in the 1920s, apparently as a food source (rather than cattle) for ranch hands. The animals have done very well in that state, and there are probably more there than in India and Pakistan combined. Nilgai are tough to bring down. Turpin used a semi-custom McMillan rifle to take his.

Allen always wanted a shotgun in the Dakota line, so, after the Model 97 came the Dakota Legend shotgun. It was to be available in three models, and most, if not all, were imported from Italy. They were side-by-side boxlock guns of high quality. They were also pretty pricey. I used one on a pheasant hunt, at the Flying B Ranch, in Idaho, and it was a very nice gun. Alas, with all that was going on within the company, after a few years, the shotgun fell by the wayside. One thing that Don Allen had in the back of his mind when working on the shotgun, was that shotgun would eventually be the basis for a double rifle. There may have even been a prototype put together, I'm not sure, but fate intervened before that became a serious project in the Dakota family.

I visited the Dakota facility, in Sturgis, several times during the Allen era. It

is a modern, well-equipped factory that employs around 35 or so workers. The machinery, for the most part, is state-of-the-art computer-controlled equipment. The work force is comprised mostly of young and energetic craftsmen and - women whose talents are just blossoming. Several of them could, most likely, make a living in the custom gun trade, but most choose to stay with Dakota. I believe that says a lot for the company. While most of the work force is made up of males, it is also refreshing to note that a substantial number of women work there. In fact, women do all the Dakota checkering and stock finishing, and they are seen throughout the plant, performing several other functions.

A quick look at the catalog or website will quickly emphasize why I call Dakota a semi-custom maker. The list of available options is almost limitless. A prospective customer for a Dakota 76 rifle can select the grade of the blank for the stock, buttplate desired, grip cap, bolt checkering or not, a standard cartridge or one of Dakota's proprietary cartridges, and so on. The last catalog I looked at listed three grades of English walnut and three grades of Bastogne walnut, in addition to the standard grade.





Two views of one of the semi-custom rifle models now being manufactured and distributed by McMillan. They are not cheap, but they are reliable and accurate.

If you are in the Sturgis area, a visit to the plant is welcome and, while there, customers can personally select a stock blank from the many on hand. Only time and the depth of one's wallet limits what can be done. If a customer wants engraving, Dakota can arrange it. If the customer has a favorite engraver, he can arrange the engraving job personally and Dakota will accommodate those wishes, too. Ordering a Dakota is almost the same as ordering a full-blown custom job, but without some of the full-blown cost, although electing many of the available options can run up the tab substantially.

A couple years before the original *Modern Custom Guns* went to press, I had a hankering for one of Dakota's Model 10 rifles. I have been a sucker for single-shot rifles, for as long as I can remember. I had long liked the Model 10, but the size of the action was a bit diminutive, for my tastes, in its standard cartridge configuration. When Allen came out with his line of proprietary cartridges and slightly beefed up the Model 10 action to handle them, my willpower vanished and I ordered one in the 7mm Dakota chambering. I had on hand a stock blank that I'd saved for more than 20 years, for something special. I also had a Heym stainless steel barrel, hammer-forged for the 7mm bore. Heym makes very good barrels, but, for whatever reason, they were especially good in a 7mm bore.

Finally, I had a new Leupold 2-7x variable scope in my goodies box. I bundled all the items and shipped them off to Sturgis. Six months later, my rifle was finished.



My 9.3×62 built by Granite Mountain Arms. It is probably a bit more to the custom side than semi-custom, but is not truly a full custom piece. Whatever, it is a great rifle and one of the most accurate I've come across lately. It shoots most anything, factory or handloads, into .5-MOA.





Two production views of the E.R. Shaw semi-custom rifle. This company will build pretty much any caliber you want, for a very reasonable price. The one I have is super-accurate.

Allen and his crew used all the components I'd provided, in the crafting of my rifle. Allen had sent the action, scope mounts, grip cap, and perhaps another item or two to Doug Turnbull for his magical case coloring, and he farmed out the stainless steel barrel to HS Precision for a coating job. I don't know what process HS uses, but the end result was most pleasing. I believe it uses some type of Teflon finish on stainless steel, as it cannot be blued via the ordinary processes. Whatever it is, it works wonderfully. The color is a very pleasing dark blue matte finished. The remainder of the work on the rifle was done in-house, in Sturgis.

The finished rifle was one of my prides. It was the epitome of what a single-shot rifle should be like, at least in my somewhat jaded view. Allen apparently

liked it, as well, as he used a photo of my rifle on one of his decorative tin plaques. It was a wonderful rifle that shot very well and looked fantastic.

Not too long afterwards, Don Allen was diagnosed with a terminal illness. Not wanting to leave his wife with the responsibilities associated with running a manufacturing facility and marketing the products, he put the company up for sale. He eventually found a buyer, and the ownership and management of Dakota Arms changed hands. Shortly thereafter, Don Allen passed.



New Zealander Glenn Soroka is making a modern version of the Gibbs Farquharson. They are pretty pricey, starting at about \$15,000 or so, but are closer to custom than semi-custom. These rifles are also unavailable from any other source I'm aware of. I provided the stock blank for my rifle and specified a color case hardened frame, but no other extras. It is a .300 H&H.

For a while, the new owner seemed fine. He expanded the product line, acquiring Nesika firearms, Miller single-shot firearms, and Walther gun cases. But, after some time, things began to unravel. Eventually, the company went into bankruptcy, only to be repurchased by the same guy. He still couldn't pull it off,

and the company was put on the market. It was purchased by the present owners, The Freedom Group, and placed under the management of Remington Arms, also owned by the Freedom Group. Since then, it has been doing very well. But, during the tenure of the previous owner, to whom I will be extraordinarily nice and say he wasn't my cup of tea, I became so soured by the events with the company under his management, I sold all my Dakota rifles, save one. Alas, the Model 10 was one of the ones I sold.

Another semi-custom firm is Cooper Arms. I'm not thoroughly familiar with its rifles, but, after a couple hiccups, the company seems to be doing fine. The company was founded and operated for several years by Dan Cooper. He ran afoul of a lot of shooters with some of his political affairs and eventually sold the company. He is no longer involved with it in any way that I'm aware of. The company is building very nice and highly accurate rifles and, best I can tell, doing very well.

There are a number of other firms that specialize in producing semi-custom firearms. Some, like Dakota and, until it made a few bad decisions, the Empire Rifle Co., put out a high-grade gun close to a full custom job. Others, like New Ultra Light Arms, specialize in very lightweight hunting rifles, while Kenny Jarrett and HS Precision specialize in exceptionally accurate rifles. The list goes on and on.



This is the prototype for the Heym-Martini Express rifle. Custom maker Ralf Martini did the design and crafted the prototype. A few changes have been made in the production rifles, and they are now available. They rate a good strong semi-custom.



Dakota Arms built this Model 76 for the me. I provided the California English blank and ordered the stock unchecked. Checkering specialist, the late Dennis Richards, did that work the stock.



Dan Cooper made this Cooper rifle for me, when he still owned the company. It is chambered for the .257 Ackley Improved cartridge and shoots like a “house afire,” as we would say in the hills of eastern Kentucky. The first group shot with a thrown together, case-forming load using 117-grain round-nose bullets, was well under .5-MOA.

Some custom makers also turn out a line of semi-custom guns. I remember reading that the late Monty Kennedy had such a line of rifles, as did Tucson custom maker Frank Wells. I don't believe that Frank still offers that service now. In fact, I'm not even sure that he is still making rifles at all. I've not seen him in a very long time, and I've heard that he's retired.

There is another class of gun maker, but I'm not sure exactly where to categorize them. I've already mentioned three, Kenny Jarrett, New Ultra Light Arms, and HS Precision. There are quite a lot more. Some have been at it for several years, and others have come along rather recently. There are several variations, but basically the maker comes up with an action, either by making it or buying one, with a barrel, again, either by making it or buying it, and a stock, you guessed it, but either making it or buying it, and using those components builds a rifle.

Of the three mentioned above, Kenny Jarrett makes his own actions and barrels. Melvin Forbes of New Ultra Light Arms builds his actions and stocks, but I think his barrels are made for him by Douglas. HS Precision makes all three major components. McMillan is another one that has recently developed a line of fine rifles. It makes the action and the stock, but sub-contracts the barrel, as I understand it.

There are many of this type of maker out there turning out fine rifles. Just about all use composite stocks for their rifles. Some guys call them custom, but I'll not go quite that far. I'll fit them into the semi-custom category for the purposes of this book update, and I'll agree that just about all have some custom features. Hopefully, they will all do well in the marketplace as there is certainly a niche for the product. There are many shooters who are not happy with out-of-the-box factory models, but who at the same time simply cannot afford a full-

blown custom job from a good maker. I would dearly love to have Dave Miller, John Bolliger, or any number of guys I could name make me one of their fantastic custom rifles. If this book sells a million copies, I'll plunk down an order for one from each.

16

The State of the Art Today

There is an old theory that laments the passing of the old guard in any endeavor. The prevailing tenet seems to be that once they are all gone, the quality of the craft, whatever it is, is doomed to mediocrity forever. This theme is particularly true in the gun making profession. I have heard it expressed about engravers, stock makers, metalsmiths — and the entire British gun trade. At one time, I succumbed to the conviction myself, moaning and groaning along with the best of the naysayers.

Well, folks, I'm here to tell you that, at least when it comes to the gun making profession, nothing could be further from the truth. I have seen the work of legends in the custom gun field, a bunch of them. Many were good — *very* good. But I have yet to see an example from any of them that comes close to the quality of much of the work being produced today. As I said at the beginning of the book, I'm sure there are many legitimate reasons for this, yet I am certain that lack of artistic talent and skills in those legends that came before them was rarely one of them. Even so, the quality of the work today far exceeds that of a few years ago and continues to rise.

It is difficult to find fault in most of the custom products available today. The more examples I see, the more mind-boggling the quality becomes to me. Steve Heilmann's metalwork, for example, is as close to perfection as I have ever seen. Each time I look at one of his jobs, I think it can't be bettered. The next time I come across one, it *is* better, not by much, mind you, but still *better*. In my experience, this is true for all aspects of the gun maker's art, as the same can be

said of David Miller, Curt Crum, Rick Stickley, Mark Cromwell, James Anderson, and many others.



Photo courtesy Mustafa Bilal

I lifted a photo from engraver Denis Reece's website, because it was so nicely done. Steve Heilmann built this magnificent rifle and Denis did all the engraving. If this isn't state of the art, I don't know what would be.



A fantastic rifle from a superb builder is what the client for this rifle got. Human hands can't make one any better. D'Arcy Echols crafted it.



Photos courtesy Kevin Dilley

Another .505 Gibbs rifle from D'Arcy Echols. This one is a bit plainer, but the quality of the work is the same.



A pair of rifles from the David Miller Co. Nothing is left to chance in the Miller shop. When a rifle leaves there, it's as good as David and Curt Crum can make it. Believe me, that's plenty good.



Photo courtesy Christian Kimber

Ralf Martini built this superb .416 Rigby for a friend of mine. At least he was. I'll bet a I lose that friend after I steal his rifle! It is what I would call quietly elegant.



Photo courtesy Michael Wheatley

I Don't believe I've ever seen anything more impressive than this display, with Mike Dubber's engraving, Katherine Plummer's scrim art, Larry Downing's knife making, and Michael Wheatley's photography. What more could anyone ask?

Engravers and their engravings are also good examples. For many years, I

felt that very few American engravers were even close to their European counterparts in artistic talent, design, and execution. Much of the work I had witnessed had been pretty crude. I saw engraved quail that looked more like pregnant Gila monsters than the elegant Mr. Bob. Scrollwork was often as ragged as my hunting shirt. Overall design was slipshod, and engraved scenes as a whole just didn't mesh or flow. There were exceptions, but it pains me to say not many. For a while, I preferred my stuff to remain unadorned, rather than be covered with inartistic engraving work. It is a far different story today. There are any number of American engravers who can and do hold their own.

Checkering is another component of the art form that has been improved substantially, both in design and execution. Masters like Tom Shelhamer, Monty Kennedy, Leonard Mews, and Dale Goens, to name a few, did outstanding checkering. I didn't care all that much for Shelhamer's patterns, but his execution was superb. Both Kennedy and Goens were much more versatile in design, I think, and also exhibited precise execution. Even so, some of the work being done now is better. A checkering job from John Bolliger, Duane Wiebe, Gary Goudy, James Anderson, Curt Crum, D'Arcy Echols, and others is as good as it gets. If you want a traditional point pattern, they can do it as well as anyone. Want fancy ribbons and *fleur de lis* patterns? They can do that, too.

For many years, case coloring was a lost art. A lot of craftsmen and -women tried their hands at it, but few succeeded. Most jobs stood out like a hooker at a church social. Doug Turnbull came along and changed that in a hurry, just as he did metal finishing. For years, there were basically two choices: slow rust blue and hot caustic blue. These days, there are processes for finishing metal that would put an alchemist to shame. I don't pretend to understand them, and I don't know how durable they are, but they sure look good. Turnbull and Pete Mazur are masters of the art of metal finishing.

We have seen several ladies get involved in the business. I know only of one who's involved in all aspects of gun making, and that is Sharon Dressel. She and her gun making husband, Paul, are very active in the trade. They are also a

source for excellent stock blanks. There are other women I know in the business who are heavily involved in specialty areas such as checkering, finishing, and engraving. Kathy Forster and Pat Taylor do great checkering, for instance, and Kathy has been doing some custom stock work of late. Lisa Tomlin turns out wonderfully delicate engraving patterns that are superbly done, and Diane Scalese is another doing great work. I suspect that we will see this trend continue and expand.

I cannot think of a single aspect of building a custom gun that was done better in an earlier time. I believe the finest custom firearms ever made, and at least in the case of rifles and pistols, are being crafted right now here in the USA. Each year that passes sees improvements, often subtle, but improvements nonetheless. Still, I believe the best is still to come.



Photo courtesy Steven Dodd Hughes

The closest thing that Jerry Fisher has to a protégé is Joe Smithson, and he has learned his lessons well. Joe built this left-hand .416 Rigby. There are none better.

Perhaps the single most promising aspect of the custom gun trade is the fact that many of today's best craftsmen and women are still quite young. I probably have shorts older than some of them! Even so, they are executing custom work that is almost scary - it is so well done. Imagine how good they might be when

that is almost scary, it is so well done. Imagine how good they might be when they grow up.

I have heard for eons, now, that top-quality walnut for stock blanks is destined to be a thing of the past. The story goes that wood merchants are cutting the last of the trees and most are being turned into veneer. Well, I don't have a census of walnut trees around the world, but plenty of blanks seem to be available, with new sources turning up all the time. I won't say that the supply is endless by any means, but there are obviously still plenty of good blanks to be had, even if prices continue to escalate. Yes, exhibition quality blanks are rare, but, then, they always have been. Across the spectrum of other grades, though, I believe there are plenty still available.

Machinery and tools have been vastly improved over the years. Steel technology has been bettered and the technical and artistic skills of the makers have made quantum leaps. Added to this, there seems to be a breed of client willing and able to pay the tab to justify the maker devoting the time it takes to do a spectacular job. There are no free rides — or cheap ones.

If there's a downside to all this wonderful craftsmanship, it's that few national publications have really covered the custom gun industry well. That is unfortunate. Perhaps the reason is that the custom guys and gals are not the best advertisers. I don't know. One of our original true champions in the press, John Amber, is gone, but his successor at the helm of *Gun Digest*, presently Jerry Lee, continues to run custom gun coverage in his book. There are also a few monthly magazines that run an occasional piece on the custom trade. Most do it rarely, though.



Photo courtesy Steven Helsley

This was originally a Winchester Model 63 auto-loader, but it is difficult to recognize. Steve Heilmann completely rebuilt it to make it the perfection it now is. Denis Reece did the wonderful engraving.



Photo courtesy Mustafa Bilal

Reto Buehler built this fantastic .500 Jeffery. Reto's work is like fine wine, it just gets better with age — and it was extraordinary to begin with. He's still a young man, so how good will he be in the future? I can't imagine.

I can understand the business of magazine publishing. It is well known that advertising dollars make or break a publication. With that in mind, it is clear that magazines will primarily run features that will attract advertising revenues. Still, it would seem prudent for any magazine in the field to give some editorial coverage to custom guns. At least the little coverage that is out there is excellent. I believe that has helped immensely.

Finally, thanks goes to the efforts of the guilds, the NRA, SCI, and DSC, for hosting their annual get-togethers, where enthusiasts gather and see what is going on. As a result, the word does get out and makers have the opportunity to show the shooting public what they are capable of doing. They can talk nose to

show the shooting public what they are capable of doing. They can talk nose to nose with their potential clients and explain what their version of a custom gun is all about. After that, it is purely a matter of budget and time.

All these things together make the state of the art the best it has ever been and getting better as time passes. For the custom gun aficionado, it is utopia, Noah's ark, and the Garden of Eden, all rolled into one.

Postscript

I left myself some space in this chapter to ramble, philosophize, and blow off a little steam (maybe a lot of steam). I am, admittedly and unashamedly a custom gun fan. I am also a devotee of the philosophy of the late Jack O'Connor. As such, I maintain that the .270 Winchester pushing along any really good 130-grain bullet around 3,100 fps is about all the cartridge anyone needs for North American hunting. I believe that the pre-'64 Model 70 Winchester is probably the best factory rifle ever built, and I long ago concluded that any custom rifle should be classic in design and form. I think the big-bore buffs are out of touch with reality, as well as I think preposterous the idea that a bore size of .33-caliber with a minimum bullet weight of 250 grains is essential for taking whitetail and mule deer.

Still, I begrudge little. If a particular sportsman wants to use a .375 H&H Magnum for his or her pet mule deer rifle, or a .458 Winchester, for that matter, that's fine with me. If, as I read from one "authority" that he'd taken his caribou with a .470 Nitro Express double rifle at 275 yards, amen, brother. This same guru also recommended the .375 H&H as a deer rifle, while condemning the 7mm Remington Magnum as a moose rifle. That's also all right by me, and, as far as I'm concerned, if a fellow wants to use a 105mm howitzer as a whitetail gun, that's okay, too, although the DNR might have a few words about it. All I ask is that he let me know where he'll be hunting so that I can avoid the area.

Where I have a problem is when such a purveyor of "infinite knowledge" states that his recommended cannon is *necessary* for a particular game animal and anything less just won't do. I have hunted a lot with one of several rifles chambered for the .270 Winchester. I don't have much experience with a lot of

cartridges, but I have used a .270 enough to know what it will do. I don't believe there is a better cartridge for game up to caribou in size. I have also used a double rife quite a bit, including one in .470 Nitro Express. I'd just as soon throw rocks as I would shoot at an animal 275 yards away with such an elephant cartridge. Still not convinced? I have taken several moose and been present when several others were taken. Moose have a big glass jaw. Hit fairly with a good bullet from almost any caliber, including the 7mm Remington Magnum, you'll have a very dead moose.



Photo courtesy Steve Heilmann

One of a pair of fantastic hunting rifles from the Steve Heilmann shop. Denis Reece engraved both.



Photo courtesy James Anderson

Glen Morovits did both the metalwork and the stockwork on this fine hunting rifle. His checkering is also superb.

My philosophy has always been “to each his own.” So long as a cartridge is at least adequate for a particular species, that’s fine with me. If it is obviously overkill, that’s equally fine. They can’t be killed deader than dead and, often, confidence with one’s rifle is every bit as important as the size of the hole in the barrel. Proper bullet placement is, I think, almost always much more important.

One argument that appears occasionally in print is that the .280 Remington is a vastly superior cartridge to the .270. The often cited reason I’ve seen for this pronouncement is that there are more choices of bullet weights available for the .280. That is true. However, if there is an animal that can tell the difference in being fairly hit with a good .277-inch 130-grain bullet and a 140-grain .284-inch bullet, both traveling along at similar velocities, I have yet to see it.

One well-known authority wrote that the .280 was an inherently more accurate cartridge than the .270. He cited no data source for this pronouncement that I recall. I asked several custom makers about this and was told that B.S. is B.S. A couple makers I know well won't even take an order for a .280, due to past problems in getting them to shoot accurately. I accept the fact that the .280 is a good cartridge, and I even own a couple rifles chambered for it. In fact, I used one on the last couple animals I've taken. Both my .280 rifles are superbly accurate, but no more or less so than my .270s. In my view, neither is one whit better or worse than the other. If a hunter wants to use the .280, so be it. Just don't tell me that it is *better* than the .270 on animals of appropriate size. It just ain't so.

I suggest that custom gun fanciers should have their rifles built in whatever caliber they feel comfortable with and what has worked for them. Take your authorities with a grain of salt. I maintain there is no substitute for experience, and whatever one's experience tells him is right, usually is. It is difficult to argue with success. For instance, while I am the first to admit that a .270 is on the puny side for moose and would never recommend that caliber as ideal moose medicine, it *will* work; the only moose I have ever seen literally knocked off its feet was hit with a .270. I have seen them shot with everything from a hot .300 magnum up to and including a .375 H&H. Typically, hit through the lungs with most anything, they will give little signs of being hit, wander off a couple hundreds yards or less and, if not pushed, will simply lay down and die. When the hit is right, it makes little difference what cartridge was used.



If someone put me on the spot and required me to make a recommendation for the ideal moose cartridge, it would probably be a .338 Winchester, .330 Dakota, or a .340 Weatherby. Still there are many others that would fill the bill quite nicely. I've become enamored with an old but very efficient cartridge of late. German gunsmith Otto Bock developed the 9.3×62 cartridge, way back in 1905. He developed it specifically for German settlers heading off to the German colonies in Africa and needing a reasonably priced rifle suitable for use on the game there. The 9.3×62 proved to be quite successful. If I had the yen and the bucks to set up a moose hunt in Alaska, I'd probably use one of my 9.3×62-chambered custom rifles. What does all this have to do with custom guns? Not much, except that, if a hunter is having a custom rifle built for moose hunting, those are my thoughts on the subject.

While it is clear that my preference in custom rifles runs to classic styling, matte cold rust bluing, precise checkering in either a generous point or *fleur de lis* pattern, and a satin hand-rubbed oil finish, that is my choice. If others like rollover combs, sharply hooked grips, white spacers at the butt and fore-end, fish-scale carving instead of checkering, and gold inlaid maidens for engraving, that is their choice. Neither of us is right or wrong, only different. Most likely we'd choose different cars, homes, watches, and mates. What we choose is hopefully right for us.



These two rifles were Jack O'Connor's all-time favorites. Both are .270s (what else?), and both were built by Al Biesen (ditto). The bottom rifle was built first, his No. 1 rifle. He liked it so well he feared shooting out the barrel or some other catastrophe, so he had Al build a duplicate, his No. 2 rifle. His plan was to use the No. 2 rifle for normal stuff and reserve the No. 1 for special hunts. As it turned out, he liked the No. 2 rifle even better than No. 1.

The No. 2 rifle is the one that he wrote about having buried with him. He didn't.

We typically select a maker for our masterpiece based upon their reputation, signature styling, the waiting list, and pricing, though not necessarily in that order. We select an engraver pretty much along the same criteria. These are all very valid selection criteria. Where some make a mistake is when the preferred maker has too long a waiting list or the prices are too high, and they go to another maker that has a shorter waiting list and/or less expensive pricing and request that he copy the preferred maker's product. That is generally always a mistake, and the resulting custom gun will be a disappointment.



This Jack O'Connor rifle was built on a Brno Mauser action and with a Bliss Titus barrel. Stockmaker Earl Milliron stocked the rifle. It is still in new condition; I don't believe that O'Connor ever hunted with it.



This is O'Connor's last custom .375 H&H. Tom Burgess did the extensive metalwork on the rifle and Earl Milliron stocked it. It was finished in 1971. Jack O'Connor liked the 7x57 almost as much as his beloved .270.



Jack O'Connor had this one built for himself, in 1951, by Tom Burgess and Russ Leonard. Alas, his wife, Eleanor, tried the rifle, fell in love with it, and declared ownership. She used this rifle for the majority of her hunting exploits. Jack decided he needed another and managed to get the last 7mm barrel that Winchester had in the plant screwed into a Model 70 action. Al Biesen turned it into this spiffy rifle.

There are many makers and engravers plying their trade. Surely one of them can meet a client's desires. Among the makers I know, it would be difficult to get one of them to build a rifle with non-classic features; most just wouldn't accept the job. I tend to associate with makers who turn out custom guns that are in line with my preferred styling. Even so, there are makers out there who prefer to do rollover comb stocks and white line spacers. There is, I'm sure, a maker for all tastes in custom guns. Some may just be a bit more difficult to find.

Are custom guns worth their cost? The answer to that question must be written as a politically correct response — yes and no. They are certainly worth their cost if the client is pleased. Hours and hours of very demanding and precise work does not come cheaply. Still, I don't know of a single maker who earns, per hour, what plumbers, auto mechanics, and electricians earn. Added to that, most gun makers are one-man shops. There are no company health plans,

retirement plans, sick leave, paid vacations, *etc.* Considered in that light, custom jobs are the deal of the century.

On the other hand, prices vary widely for very similar products. While one maker, primarily because of his reputation in the field, can command \$5,000 or more for a custom stock, another might get only half that amount or less. Yet there may very well be few differences in skill levels between the two. In that case, the latter represents a real bargain. Earning a reputation means paying one's dues and, having done that, a well-known maker can demand and receive far more return. This fact is true whether discussing custom makers, engravers, painters, chefs, or hair stylists.

I am reminded of a bit of advice I received from an old friend of mine, many years ago. He lived in the L.A. area of California. I was bemoaning the fact that I was looking at coming up with college educations for my three sons, and it looked like an impossible task. He told me the best thing I could do for them was to have them bypass college. He told me, "Of the two richest guys I know in town, one is a plumber and the other a hair dresser." I didn't follow his advice — but I've never forgotten it either.

As mentioned up front in this book, custom guns are generally not worth their cost if they are purchased solely as an investment. There are some exceptions. One might be that a client finds an up and coming maker early in his career, has a few guns made by that maker and, later (several years, as a rule), as the maker's reputation and prices escalate drastically, sells them at a substantial profit. I believe this rarely happens, though. Usually, clients have guns built simply to satisfy their desire to have them. Later, if for whatever reason, a client decides to sell one, he will typically realize about half what it cost or less.



There's usually an interesting story behind every rifle, this one particularly so. In 1948, Al Biesen worked briefly for Columbia Gun Co., before going into his own business. This was the third rifle Biesen built for O'Connor, and Al built it while working for Columbia. It's a .22-250 built on a shortened Springfield action. The barrel was inscribed "Columbia Gun Co. Spokane, Washington Custom Built for Jack O'Conner." Al is in his mid-nineties as this is written, and he is still embarrassed at misspelling O'Connor.

The reason for this makes common sense. If the cost approaches the price of having the builder make another, the buyer will most often have one built to suit themselves. Two friends of mine, who were undergoing a divorce, once asked me to appraise my pal's custom rifles for the divorce settlement. That, I knew, was fraught with danger. Even so, I did it. The lady involved, previously a good friend, hasn't spoken to me since. She knew what my pal had paid for the rifles and, when she saw my appraisal, she almost delivered a litter of grizzly bears! I'm sure she believes that her now ex-husband and I had conspired against her. I didn't, nor did he ask me to. I appraised them honestly and, I believe, fairly. My friend has similar tastes to mine in rifles. Reasonably well-known makers put together their guns very nicely for my pal. One major problem when it came to trying to market them, though, was that he is a wildcat fancier. Many of his rifles were chambered for oddball cartridges. If there is anything more difficult to sell for a reasonable price than a custom rifle in a non-standard cartridge, I don't know what it is.

Anyway, I would rarely, if ever, recommend buying a custom gun as an investment. The odds are that a savings account at 2½-percent interest would return more on the investment. Custom guns should be bought because the buyer *wants* them, and for no other reason. (Either that, or, they need to satisfy some highly specialized requirement that's just not available any other way.)

I own and use custom guns because I am fascinated with them. I relish fancy walnut, precise workmanship, superb finishing and, most of all, I enjoy hunting with them. I cherish my custom jobs before and after the hunt, and I get great satisfaction out of taking them out of the safe and rubbing on a drop or two of stock oil every now and then. I am pleased to show them to admiring friends and

seen on every hunt and when I am pleased to show them to hunting friends and discuss their features. Once in awhile, I down a trophy elk and a charging stud buffalo, right there in my den. That is what the custom gun game is all about, with me. I have them made to use and to admire. I do both.

The quality of today's custom gun has never been better. Uncommon artistry is prevalent throughout the industry and the number of talented artisans crafting their product for the marketplace has never been higher. Their skill levels are, by and large, uniformly awe-inspiring. There has never been a better time than now to place an order for a custom gun.

Custom Gun Makers, Engravers, and Specialists

Resource Listing

Abraben, Reveve: (386) 752-1342

Anderson, James: chico@sdplains.com; (605) 456-1798

Barraclough, John: jbarraclough@sbcglobal.net; (310) 324-2574

Biesen, Roger: (509) 328-6818

Biesen-Malicki, Paula: (509) 954-0763

Billeb, Steve: stevebilleb@wyoming.com; (307) 587-4278

Bisio, Jim: jimbisio@hotmail.com; (719) 495-1805

Blair, Jim: jblairegrav@msn.com; (307) 436-8115

Bolliger, John: info@mountainriflery.com; (208) 234-7142

Breeding, Ryan: ryan@rbbigbores.com; (661) 317-2996

Buehler, Reto: rbrifle@earthlink.net; (541) 664-9109

Corpe, James: jcorpe@centurytel.net; (573) 323-4186

David Miller Co: (520) 326-3117

Dressel, Paul: dressels@charter.net; (509) 966-9233

Dressel, Sharon: dressels@nwinfo.net; (509) 966-9233

Dubber, Mike: mwdub@aol.com; (812) 476-0271

Echols, D'Arcy: echolslegend@comcast.net; (435) 755-6842

Evans, Bob: (503) 656-5693

Ferrell, Roger: rogersgunworks@yahoo.com; (770) 460-0533

Fewless, Glen: gfewless@tds.net; (262) 534-5154

Fisher, Jerry: jerry817@centurytel.net; (406) 837-2722

Forster, Kathy: glenwood.forster@gmail.com; (208) 935-2023

Goudy, Gary: goudy@q.com; (509) 382-2726

Griffiths, Lee: leegrif@comcast.net; (435) 563-6600

Hands, Barry Lee: barry_hands@yahoo.com; (406) 249-4334

Heilmann, Steve: sheilmann@sbcglobal.net; (530) 272-8758

Helgeland, Lee: leebarb@centurytel.net; (406) 837-2041

Henrichs, Roger: engraver@cableone.net; (701) 232-6793

Hochstrat, Brian: brian@bhsaddles.com; (208) 355-1234

Holehan, Pat: plholehan@theriver.com; (520) 745-0622

Huey, Marvin: hueycases@yahoo.com; (785) 842-0062

Hughes, Steve D.: sdh@finegunmaking.com; (406) 222-9377

Kaufman, Jesse: jkaufman@rushmore.com; (605) 720-1710

Kobe, Jim: jkob60@msn.com; (952) 884-6031

Libhart, Craig: gunmaker@embarqmail.com; (717) 367-3414

Lindke, Paul: plindke@prodigy.net; (719) 873-9890

Lister, Weldon: wlister@gvtc.com; (210) 269-0102

Lofgren, Al: grumpy7075@tds.net (269) 731-5884

Martini, Ralf: martinigunmakers@shaw.ca; (250) 417-2926

Maxson, John: jem40x43160@yahoo.com; (740) 636-1243

Morovits, Glen: morcco@sdplains.com; (605) 456-2662

NECG, Ltd.: info@necgltd.com; (603) 287-4836

Nelson, Steve: nelsons-custom@comcast.net; (541) 745-5232

Norin, Dave: davenorin57@yahoo.com; (847) 603-1780

Rabeno, Marty: fancygun@aol.com; (970) 382-0353

Reece, Denis: denisreece530@hotmail.com; (530) 743-5989

Rundell, Joe: engraverjoe@comcast.net; (810) 687-0559

Scalese, Diane: (406) 378-2414

Seeley, Joe: joeseeleygunsmith@gmail.com; (607) 527-8470

Simillion, Gene: gsimillion@hotmail.com; (970) 641-1126

Smithson, Joe: jpsmithson@hotmail.com; (801) 224-2041

Strosin, Bob: res@tznet.com; (715) 325-7550

Swift Bullet Co.: contact@swiftbullets.com; (785) 754-3959

Tapp, Jeff: tappguns@email.com; (843) 847-7812

Taylor, Pat: (503) 266-3684

Toenjes, Hugh: hjt65@hotmail.com; (605) 673-4072

Tomlin, Lisa: lggraver@aol.com

Tucker, James: jctstocker@yhoo.com; (541) 664-9160

Turnbull, Doug: info@turnbullrestoration.com; (585) 657-6338

Turner, Gary: talley@talleyrings.com; (803) 854-5700

Ullman, Mike: gunmaker@satx.rr.com; (830) 399-0126

Wear, Jim: jwear@wyoming.com; (307) 745-0520

Welch, Same: (435) 259-8131

Wesbrook, David: (715) 457-2768

Wiebe, Duane: duane@customgunandrifle.com; (253) 535-0066

Wisner, Jim: jwisner@compprime.com; (360) 748-4590

Wigton, Kevin: kevinwigton@yahoo.com; (810) 743-6758

Wilcox, Terry: wilcoxwalnut@yahoo.com; (910) 583-7600

About the Author



Tom Turpin is the product of his childhood in the Commonwealth of Kentucky. Born in Estill County, where the bluegrass kisses the Appalachian Mountains, he benefited greatly from the culture of his fellow Kentuckians of the time. Honesty, integrity, and responsibility were the attributes of his neighbors, and these attributes became his to live up to. Growing up during a period in our history when no one locked their doors and when everyone in the county knew any individual whose word could not be trusted, he learned early

on that life was sweet and rewarding, but also demanding and unforgiving.

Tom lived in the great Commonwealth through college, graduating from what is now Eastern Kentucky University, in 1959. Upon his graduation, and thanks to the ROTC program, he was commissioned a second lieutenant in the United States Army. He entered active duty in the spring of 1960. Early in his army career, he shot competitively on several rifle teams, including the team that participated in the third army matches at Fort Benning, Georgia. He learned, surprisingly, that competitive shooting was not a career-enhancing move in the army.

Tom's nationally published writing career began, in 1972, when Petersen's *Guns & Ammo* magazine published his first article. At the time, he was living in Alaska, pulling a tour of duty with the U.S. Army. Not long after that, he had a few articles published in *Gun Digest* and *GUNS Magazine*. He became first acquainted with and, as time passed, a good friend of *Gun Digest* longtime editor John T. Amber. Amber became Tom's mentor and a surrogate father, introducing him around the industry. This helped Tom's budding writing career immensely. During the 1970s and '80s, Tom was very busy, balancing a military career, including a couple of tours in Vietnam, an outdoor writing career, raising a family, and serving as a design consultant to the old German firearms manufacturer, F.W. Heym. From time to time, he also assisted the great German scope manufacturer Schmidt & Bender. His military career ended in retirement as a lieutenant colonel, after 26 years active duty, at the beginning of 1986.

These days, after more than 40 years in the writing business, several hundred published articles, four books, and substantial contributions to several more, he is still at the keyboard. He is presently a contributing editor to *Gun Digest* and a freelance contributor to most other publications in our field. His latest book, *Artistry in Wood & Metal*, was originally published by Safari Club International and recently reprinted by Gun Digest/Krause Publications. He is working, as time permits, on another book or two.

An avid hunter, Tom has taken game on four continents. A great fan of the late Jack O'Connor, Tom found that writer's sage advice on all things guns and hunting to be accurate. As such, his favorite hunting caliber for most situations is the old .270 Winchester. One of Tom's published articles was a tribute to O'Connor, on what would have been Jack's one-hundredth birthday. That story was published in Petersen's *RifleShooter* magazine. Tom and his wife, Pauline, live and work in the wonderful high desert community of Sierra Vista, Arizona, along with their old Labrador Sophie, three German shorthair pointers, and 22 Japanese koi fish. The elk steaks still taste wonderful, the Scotch still provides a tranquilizing effect that adds to the pleasure of life, and, at the ripe old age of 74, he is still looking forward to his next hunt, his next story, and his next book.





Acknowledgments

Parts of this book have been previously published in a slightly different form in GUNS Magazine. I express my deepest appreciation to Firearms Marketing Group for permission to use some of the material again here.

I would also like to thank the gun makers and engravers, particularly the American Custom Gunmakers Guild and the Firearms Engravers Guild of America for their unwavering support in this project.

Finally, and with great sadness, I express my admiration and thanks to my old friend Jim Woods and his wife, Jackie, who gave me encouragement when I needed it and for their helpful suggestions in making this a better book. Alas, I lost my pal Jim when I was headed down the home stretch on this book and needed him the most.

Copyright ©2013 F+W Media, Inc.

All rights reserved. No portion of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher, except by a reviewer who may quote brief passages in a critical article or review to be printed in a magazine or newspaper, or electronically transmitted on radio, television, or the Internet.

Published by



Gun Digest® Books, an imprint of F+W Media, Inc.
Krause Publications • 700 East State Street • Iola, WI 54990-0001
715-445-2214 • 888-457-2873
www.krausebooks.com

To order books or other products call toll-free 1-800-258-0929
or visit us online at www.gundigeststore.com

ISBN-13: 978-1-4402-3644-0
ISBN-10: 1-4402-3644-5

Edited by Jennifer L.S. Pearsall
Cover Design by Sharon Bartsch
Designed by Laura Spencer